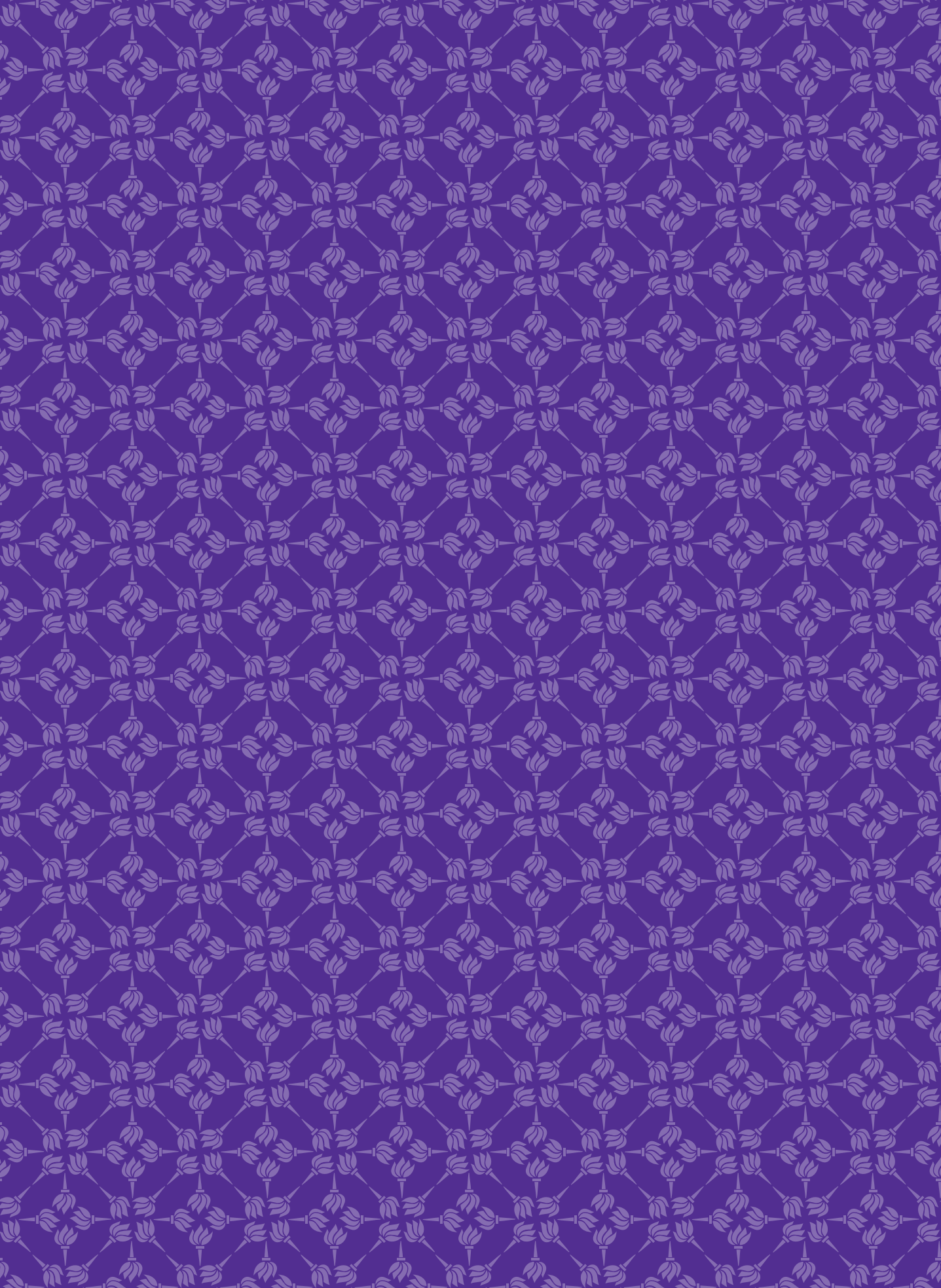


NYU ABU DHABI CLASS OF 2017

CAPSTONE PROJECT





CLASS OF 2017

CAPSTONE PROJECT

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FOREWORD



The Capstone Project is one of the culminating experiences for all students at NYU Abu Dhabi. This yearlong endeavor engages students first-hand in the discovery and production of knowledge, resulting in a deep intellectual experience. As the final step before graduating from NYU Abu Dhabi, no other project better embodies our conviction that significant research and original creative works are essential elements of the highest quality undergraduate education.

This publication presents an anthology of abstracts from Capstone projects across the university's academic majors, spanning the arts, engineering, humanities, natural sciences, and social sciences. The resulting projects highlight the formidable intellectual insights and creative accomplishments of an extraordinary cohort of international students from more than 60 countries.

NYUAD students demonstrate a rare combination of global perspective and international diversity in addition to traditional analytical prowess and intellectual fortitude. Through sustained critical inquiry, intensive research and creative activity, they pose novel questions, identify key trends, offer solutions to real-world problems, and grow in ways that will prepare them for the next chapter of their lives. These projects include examples of the finest schol-

arship and creative accomplishments, leading the students that have completed them to obtain great academic distinctions, such as winning prestigious awards and prizes, including the Rhodes Scholarship, as well as opening doors to the finest graduate programs and job opportunities in the world.

As a companion to this anthology, Alexis Gambis — NYUAD professor, filmmaker, and biologist — has produced a short film entitled *The Capstone Project* (2017). The cumulative effect of the film is a striking testament to the prolific talent, extraordinary ingenuity, and powerful creativity that distinguish our students. In the years to come, this anthology and the companion film will serve as an archive of the Capstone project and a reminder of an extraordinary class that has undergone intellectual growth and ethical maturation, and forged lifelong values and friendships during these formative years at NYU Abu Dhabi.

As this undergraduate chapter draws to a close, we take this moment in the academic career of the Class of 2017 to celebrate their pioneering intellectual accomplishments — and to recognize their incredible potential to contribute to Abu Dhabi and the world.

Fabio Piano
Provost, NYU Abu Dhabi

THE FILM



The Capstone Project (2017)

Alexis Gambis | 26min.

The Capstone Project attempts to distill the essence of a yearlong intellectual endeavor into a mosaic illustrating the rich diversity of ideas and nationalities that make up the fabric of NYU Abu Dhabi.

To celebrate the end of their undergraduate careers, members of the Class of 2017 summarize their creative and intellectual discoveries on camera. Each student explains his or her Capstone project in just 10 seconds while standing in front of a green screen constructed from an image, video, or keyword related to their project. The film is directed by Alexis Gambis, assistant professor of biology, film and new media, and science.



Alexis Gambis

ARTS & HUMANITIES

ARAB CROSSROADS

Rend Beirut

What's Behind the Facelift?: Investigating the Modification of Dubai's 'Age-Old' Corner-Stores (Baqalas)

If you do not look beyond Dubai's imposing skyscrapers and megastructures, you may just miss its 2,800 traditional corner stores (baqalas). In the early 20th century, baqalas spread throughout the city, becoming a precious social space around which neighbors gathered, children grew, and memories formed. However, in 2015, government officials announced that they will no longer grant trade licenses for baqalas as "they no longer fit the city's standards of living." At the same time, it was announced that by 2018, all baqalas would be replaced with "modern" supermarkets, specifically the multinational "7-eleven" chain. My Capstone investigates the potential impacts of this ongoing standardization process on Dubai's urban fabric. Through revisiting the politics of Dubai's trade policies and urban developments and analyzing artistic representations of the baqala, I emphasize the social and symbolic role of the baqala for Dubai's communities.

Margit Lindgren

Progress, Freedom and Social Justice: Leftist Resistance in the Kuwaiti Rentier State (1940-2016)

This study examines how the Kuwaiti political Left, from its emergence in the 1940s until today, has adapted to and influenced the formation of the Kuwaiti rentier state. Focusing on the contemporary Kuwaiti political Left, the study traces how the Kuwaiti Progressive Movement (est. in 2011) has adapted to three characteristics of the Kuwaiti rentier state: (1) the Kuwaiti state's historical relationship to British and American imperialism as well as neoliberal economic institutional policies in the era of the nation state (2) the mechanisms used by local Kuwaiti elite to maintain power, specifically those of social and political segmentation, and (3) the relative but limited access to political representation through the parliamentary electoral system before and after the 2012 protests. These three characteristics of the Kuwaiti rentier state help explain the form and socio-political position of contemporary Leftist resistance in Kuwait.

Nafisatou Mounkaila

Blackness in Nubian Literature: Idris Ali's Dongola and Poor

This Capstone takes Egypt and the novels of Egyptian Nubian writer Idris Ali as its focus to examine a social and cultural landscape where blackness has become unacceptable and even deplorable. Blackness appears in secondary sources on Nubian literature and Idris Ali's *Dongola*, but none of these sources specifically focus on "race." The more common topic is nationalism. In this capstone, I analyze the topics of gender, political activity, and labor in relation to race and blackness in two of Idris Ali's novels: *Dongola* and *Poor*.

Jood Shiqem

The Performance of Ethnicity: A Study of the Circassian Community in Jordan

The focus of my research paper is the study of the construction of an ethno-national identity within the Circassian community in Jordan. My aim is to explore the creation of a self designation: how, why, and when did the minority refer to themselves as both Circassian and Jordanian? I study the factors that contributed to the creation of a dual identity and will address the relevant social, economic, political factors, as well as the cultural and the historical ones. I do this through analyzing historical narratives, academic papers, critical theories, as well as drawing on ethnographic notes and interviews.

Myungin Sohn

Exploring ḥikma (wisdom) in the Arabic Language:

Ibn Jinnī's (d. 392/1002) Theory of al-ishtiqāq al-kabīr in the Arabic Linguistic Tradition

In this Capstone, I engage with the philosophy of language in the Arabic and Hellenic traditions to propose a link between logic and divine inspiration in Ibn Jinnī's grammatical theory, "al-ishtiqāq al-kabīr" (The Greater Derivation). Ibn Jinnī's view of an underlying ḥikma (wisdom) that governs all aspects of Arabic language and its relationship with ma'nā (meaning) corresponds to al-Sirāfi's view that meaning is produced in dialogism: "grammar is in fact a logic drawn out of Arabic language, and logic is grammar comprehensible in and through language." Ibn Jinnī's use of qiyās, a logical tool, is guided by the belief that this ḥikma is synonymous to an underlying logic of Arabic language. Through this concept of logic, I investigate how Ibn Jinnī's speculative use of qiyās, a logical tool in the Arabic linguistic tradition, may have been used to suggest the divine imposition of language.

Guillaume Sylvain

Reinventing the Past and Managing the Future: Legitimizing the State through National History in UAE Social Studies Textbooks

This paper examines the UAE social studies curriculum as a site for the construction of an Emirati national historical narrative. This narrative reinforces the legitimacy of the state by enforcing modes of inclusion and exclusion that delimit the boundaries of Emiratiness. This paper demonstrates how the curriculum imagines the primordial roots of the Emirati national community and underscores its historical spirit of unity through references to ancient civilizations and to historical Arab Muslim opposition to European colonization. It evaluates the legitimization of the current political regime through curated depictions of the pre-union past, the 1971 union, and the economic boom and development that followed. Ultimately, this paper demonstrates how the UAE social studies curriculum can be understood as an instrument for managing citizens' expectations of the state's future transition from a rentier state model to a knowledge-based, neoliberal system of governance.

FILM & NEW MEDIA

Ahmad Abdulla Al-Tunaiji

Arasian

What does it take for a 14-year-old half-Emirati to be accepted by his peers? Khalifa struggles to hide his half-Filipino identity from his Emirati schoolmates. He communicates with his Filipina mother through his younger sister and insists his mother drop him at the back entrance to the school so no one will see her. At school he secretly befriends the Filipina cleaner. When his secret is discovered by the school bullies, Khalifa is forced to make a choice. Will Khalifa stand up for his Filipino heritage or will he succumb to peer pressure?

Charlotte de Bekker

Word Count

Words cause misunderstanding, misunderstanding causes fights, and fights cause wars; or so goes the logic... but little Piet loves talking. The ticker teller on her wrist shows four words remaining as Mama's lesson of the day is about to start: a new word. Piet is enamored by the thought of a new sound between her teeth, constantly interrupted by her fear, she struggles to contain her excitement inside of herself. Mama's voice echoes as a reminder 'people used to drown in words.' Will Piet be able to keep all that is inside her within the confines of her skin?

Benjamin Marcus-Willers

Ragaraja

Ragaraja, the love-stained wisdom king, is a Buddhist deity who transforms amorous passions into spiritual awakening; love, in other words, becomes enlightenment. Drawing upon dozens of interviews organized as part of an installation, this experiential documentary explores love as a guiding force of the human race. As the audience walks through eight rooms, each depicting a unique type of love, they encounter stories from people of different backgrounds about the role love plays in these people's lives. Ragaraja explores how our experiences with love evolve and shape outlooks on life from our early years to our final ones.

Jimena Reyes Gonzalez

Alma

Smoke. Chop. Smoke. Chop. Smoke. Drown. How long is a cigarette? What does it feel like to drown? Alma is 22 years old and, like her mother before her, a chain-smoker. What is there to do when you become who you most hate? Alma can go anywhere but back, so she decides to go forward. She builds a boat to sail away into the sea. In the length of a cigarette, she sets out to find something, anything. Will it be that miraculous thing that eludes her, or will she find she can't quit her past?

Gergo Varga

Acheevment

Acheevment mixes elements from narrative fiction, documentary, and video essays. The film is a blend of cinematic techniques, telling the story of its equally chaotic main character. The coalescence of genres reflect the constant uncertainty that reigns within him regarding the ultimate question: what is the best possible way to tell this story?

Sheba Vohra

Ragaraja

Ragaraja, the love-stained wisdom king, is a Buddhist deity who transforms amorous passions into spiritual awakening; love, in other words, becomes enlightenment. Drawing upon dozens of interviews organized as part of an installation, this experiential documentary explores love as a guiding force of the human race. As the audience walks through eight rooms, each depicting a unique type of love, they encounter stories from people of different backgrounds about the role love plays in these people's lives. Ragaraja explores how our experiences with love evolve and shape outlooks on life from our early years to our final ones.

ARTS & HUMANITIES

Yunbo Wu

Mahaa

Fatima, an artist, feels the presence of her daughter, Mahaa, everywhere in her life. She tries to stay away from Mahaa by focusing on her painting. But, when Fatima and her husband fight, they both realize that all their efforts to forget Mahaa are futile.

Yi Yi Yeap

Thirty

Unmarried, thirty, and restless. At a time when women her age are either dutifully married with children or carelessly experiencing the unknown wonders of the world, Ying is stuck with her aging mother in Abu Dhabi. Her mother chides that Ying is not ready to venture out into the world on her own and fills Ying's days with mundane chores and Chinese traditions. Her mother's controlling ways push Ying to pack her bags and cut ties, but the familial duty ingrained in Ying makes her decision complicated.

Kai-Erik Jensen

China Dreams:

On the Road with Film and Politics

To date, there has been no English study of the Chinese road-movie genre. This paper will foment a discourse around the genre while situating several recent films within contemporary Chinese political rhetoric. Through the lenses of auteur studies, national film studies, and genre studies this paper argues that the road-movie is especially well suited as a means of understanding Chinese President Xi Jinping's ubiquitous China Dream.

Min-Joo Kim

Korean Drama Viewership among Young Emirati Girls

For more than a decade, the fandom of Korean popular culture has exploded throughout the Arab World, especially in the United Arab Emirates. But apart from a few market analyses, there have hardly been critical studies on the Korean Wave (*hallyu*) phenomenon in this region. I examine what attracts young Emirati girls to Korean pop culture, arguing that the transcultural fandom serves as a valuable means for negotiating and regenerating their identity. I conduct a qualitative analysis of Emirati fan practices based on interviews with members of a local Korean culture fan club. My study finds that they are not passive consumers but active agents who struggle with complex identities amidst global cultural influences. The girls venture into this new domain of foreign media, which they creatively utilize to fill in the void in the local mediascape.

HISTORY

Xuexin Cai

Crossing Mountains:

Tea Trade and Frontier Politics in the Sino-Tibetan Borderlands

For over a thousand years, Tibetans relied on China for the supply of a dietary necessity – tea. As both an economic and a strategic tool for the Chinese state, tea trade continued to connect Tibet and China across formidable mountains even as state power failed to do so during the Republican period (1912-1949). This Capstone examines the relationship between tea trade and state-building in the Sino-Tibetan borderlands as China struggled to create a modern nation from the ruins of an empire. Drawing on both archival and published sources, the author uncovers the divergent paths taken by two Chinese provinces – Sichuan and Yunnan – as they continued to supply tea to Tibet amidst ongoing border conflicts after the Qing Empire collapsed in 1911. Imperial legacies in taxation, complex frontier politics, and the successful incorporation of the Sino-Southeast Asian trade networks into the Sino-Tibetan tea trade all contributed to this divergence.

Bill Hyder

Manipulation, Spectacle, and Empowerment: The AIDS Coalition to Unleash Power and Their Media Engagement

This study explores the relationship between grassroots politics and (mass) media by looking at the AIDS Coalition to Unleash Power (ACT UP), an AIDS activist organization founded in 1987. It analyzes the different techniques and strategies of ACT UP's engagement with institutions of mass media, the Coalition's self-produced alternative media content (based on camcorder technology), and the ways in which it used media to foster its political message and agenda. In doing so, the project will explore the motives behind and evolution of ACT UP's media engagement, as well as the lasting impact of the organization's distinctive approach to grassroots organizing on this public health crisis of the 1980s.

Chaeri Lee

The Politics and Aesthetics of Iranian Coffeehouse Paintings

An art form drawing upon popular mythological, religious, and romantic themes, Iranian coffeehouse paintings were politicized in the context of debates in Iran about traditional culture and national identity. In the decades lead-

ing up to the Islamic Revolution (1977-79), nativism—a doctrine emphasizing local and historical customs in opposition to outside influences—became a central focus of debate about popular and national culture. In its bid for national legitimacy, the state supported such cultural projects as the collection, exhibition, and protection of coffeehouse paintings as a form of “native” Iranian culture; at the same time, many intellectuals viewed “native” culture as a way to resolve what they perceived as symptoms of Western cultural imperialism known as *Gharbzadegi* (Westoxification). My Capstone explores the role of coffeehouse paintings in this evolving conversation about an “authentic” Iranian identity, contested to this day by artists, intellectuals, and the state.

Connor Pearce

Contesting Aboriginality in mid-20th Century Sydney

This Capstone charts the development of aboriginality in Sydney, Australia, during the 1950s and 1960s, and its interaction with national and international currents of change. The seemingly monolithic state apparatus of assimilation contained its own contradictions which local groups exploited to develop their own concepts of Aboriginality. At the same time, new understandings of Aboriginality that sought to incorporate it into a multicultural Australian state were challenged by Aboriginal activists who wanted to forge an identity that challenged the Australian state’s claim to sovereignty.

Hayat Seid

Remembering Adwa: Oromo identity and the Politics of Memory in Ethiopia

The 1896 battle of Adwa, between Ethiopia and Italy, is known for the defeat of the Italians at the hands of the Ethiopian army, under the leadership of Emperor Menelik II, and for putting an end to Italy’s first attempt to colonise Ethiopia. The battle is often portrayed as a demonstration of Ethiopian national unity and exceptionalism, with Menelik regarded as the creator of a unified modern Ethiopia. However, these depictions have been challenged over time by different ethnic groups, particularly the Oromo, who relate Adwa and Menelik to the loss of their autonomy to political oppression. This Capstone is an intellectual history of narratives of Adwa and offers a more nuanced understanding of the battle as well as Emperor Menelik II.

Xinyi Wei

Re-locating Religious Authority: Narratives of Heresy and Orthodoxy in Chinese Islamic Literary Traditions

This Capstone investigates how Chinese Muslim scholars between the 17th and 19th centuries articulated understandings of Islamic heresy and orthodoxy. Specifically, I present how the writings of Ma Dexin (1794-1874) departed from that of his predecessors in the 17th century. I argue that while early Chinese Muslim scholars’ analysis of heresy and orthodoxy was heavily influenced by Confucian literary traditions, Ma Dexin’s writings indicates a closer engagement with Islamic scholarly traditions. Situating these scholars in their changing relationships with the ruling Qing dynasty, I demonstrate how the deteriorating relations between Chinese Muslims and the Qing court in the 19th century in fact pushed Chinese Muslim scholars to articulate a more salient Islamic identity.

Ahmad Yacout

Pulpit Rhetoric: Constructing the Fatimid State in North Africa

Looking at the homiletic sermons of three Fatimid caliphs in the period between 909CE and 969CE, this Capstone traces developments in the role of the Fatimid imam within society and Fatimid attempts to construct state legitimacy through the dynasty’s descent from the house of the prophet. It also makes a larger argument to include the homiletic sermon, the *khutba*, in studies on Islamic rhetoric and state ideology.

LITERATURE & CREATIVE WRITING

Samuel Ball

Project Title: A Translation of Antonio Ortuño's *La fila india*

La fila india is a dark, satirical novel by Mexican writer Antonio Ortuño. The work examines a corrupt bureaucracy repatriating the bodies of murdered Central American migrants. The novel re-centers typical narratives about migration in Mexico available in English, focusing on class and race anxieties of middle-class Mexicans, misogyny, and the lesser-known borderlands not shared with the US. In my introduction to the translation, I discuss the novel’s surprisingly humorous tone as an entry point to larger conversations about translation and the work’s politics. I kept many of the puns and jokes in the original Spanish, highlighting that in the US context, and the context of a

ARTS & HUMANITIES

novel concerned with North American migration, translating from Spanish to English is not translating from a foreign language, but working within a much larger network of connections (political, economic, cultural, geographic) that often function outside of, and independently from, any system of government.

Mariam ElZoghbi

Ra7ala

Ra7ala is a semi-autobiographical novella, that follows Leila, a young Egyptian woman who has recently re-discovered her Palestinian roots, as she goes to Palestine in search of her great-grandmother's house. This journey brings Leila face-to-face with her family's history and with questions about identity, loss, and diaspora. Leila's story also illustrates the nature of privilege, in that Leila is able to go on this journey with the thought that she will be able to return, and that she is able to determine for herself how she wants to be defined.

Khadeejab Farooqui

Colliding Cities

Conventional portrayals of immigrants and diasporic communities in the UAE represent Pakistanis almost exclusively as migrant laborers, overlooking an underexplored segment of the Pakistani narrative. *Colliding Cities* challenges this one-dimensional understanding and looks at the middle class and its experiences that are directed by race, nationality, class, and gender. Moreover, whilst some Pakistanis are second-, third-, or even fourth-generation residents, the UAE's legal system does not allow them to gain citizenship, suspending them in a state of permanent temporariness, which accounts for a transitory, changing relationship with the idea of home. This project — through language, memoir, interviews, and research — explores space and place, collective and displaced identity. The project helps to pinpoint and reveal the often invisible codes, divisions, and hierarchies dominant in the city, and it asks us to re-frame our understanding of Abu Dhabi through the inclusion of these narratives.

Dominique Lear

Reading the Boom:

Carmen Balcells and the Literary Agent in the Latin American Boom

The history of the Latin American Literary boom of the 1960s is too often told by the same people using the same sources. It is too often a prodigious moment of discovery, when a region's "voice" was unearthed by (male) Latin American authors helped by brave (male) publishers in

Spain who treasured cultural innovation and exchange. However, Carmen Balcells, the boom's principal literary agent, and her understudied correspondence, tell us a new story in which the publishing phenomenon ceases to be merely a transnational system of culture and becomes one also dictated by gender and capital. Balcells's overlooked presence in the boom forces us to acknowledge dimensions of the phenomenon that had to do with gender and commence, both of which are central, yet typically neglected in the conventional boom narrative. Studying Carmen Balcells helps us to widen our previously narrow focus in order to take into account the complex literary relationships that structured the Latin American boom.

Grega Ulen

Angels of History:

Feminist Politics of Autobiography and Historiography in Maja Haderlap's *Angel of Oblivion* and Assia Djebar's *Fantasia: An Algerian Cavalcade*

Using Maja Haderlap's 2011 *Angel of Oblivion* and Assia Djebar's 1985 *Fantasia: An Algerian Cavalcade*, this paper articulates a theoretical paradigm that rethinks subjectivity and temporality in order to affirm autobiographical narratives of grief as sites of historical revisionism. Reading the novels as autobiographies reveals the transformation of forms that dissolve the individual subject and give voice to the collective heritage of silenced women. The project draws on Walter Benjamin's notion of messianic time to call attention to the ways in which the novels interrupt patriarchal and imperialist productions of history. Bringing together these feminist and postcolonial autobiographies from disparate contexts elaborates an ethics and aesthetics of individual and collective mourning practices that force us to reexamine how we think about "history."

MUSIC

Garreth Chan

Unheard Of:

Creating Cinematic Soundscapes

A compilation album of original songs, scores, sound design, foley and ADR (automated dialogue replacement) created for five film Capstone projects.

PHILOSOPHY

Natalia Cruz

Unlocking Strawson; an Analysis of an Interpretation of Locke's Theory of Personal Identity

John Locke's theory of personal identity was revolutionary in many ways at the time it was published. For the first time in the Western philosophical tradition it was argued that the connections that make a person the same person across time are essentially psychological. However, there have been many interpretations of Locke's theory. One of the most recent is Galen Strawson's. Strawson argues that Locke's theory of personal identity works as a theory of moral accountability. My Capstone is a close reading of Galen Strawson's take on Locke, questioning whether it makes sense to think of Locke's account of personal identity primarily in terms of moral responsibility.

Andrew Pitts

Epistemic Entitlement II: Rise of the Mystics

Epistemic entitlement grants us knowledge without epistemic duties for certain types of perception. In my capstone I examine the implications of granting entitlement-based knowledge to mystical perceptions. Are we entitled to the knowledge gained from a putative mystical experience?

THEATER

Rita Akroush

65 Joules

According to the Law of Conservation of Energy, energy can neither be created nor destroyed; rather, it transforms from one form to another. If we think about loss in terms of this Law, then the subject of our loss is never completely created nor destroyed. 65 Joules explores this concept through the story of 8 year-old Mustafa. Trying to come to terms with his own loss, Mustafa transforms the local, 65 years old, cement factory into his own playground. But, how can the concept of transformation allow him to come to terms with his own loss?

Eve Hamel-Smith

Matapee

In *Matapee*, the women of a family come to Grandma's house to sing and to swap stories. They commune through song and encounter violence through story. *Matapee* is a

staged concept album about domestic violence in the village of Lopinot in Trinidad and Tobago. Songs are threaded together by a fiction inspired by true stories of women in the community. The piece questions the patriarchal values that normalize a culture of gendered violence as they are enacted upon a house full of women. How do the women fail to support each other? How do they protect themselves? Ultimately, it represents a young woman's exploration of the question: when does choosing to love become a calculated risk of violence? *Matapee* is an attempt to define the liminal space between the need to love and the ability to hurt, between compromise and submission, between song and spirit.

Lucas Olscamp

ANAEMIA

ANAEMIA is driven by questions of queerness when manifested in social, psychological, and physical monstrosities. The project dissects the conceptions of interiority and exteriority in relation to the body by examining the aesthetics of blood as a conduit of otherness. Through a cyclical ritual of tarnishing and cleansing, modes of suppression are unveiled, defiled, and scrutinized. Drawing on Jeffrey Jerome Cohen's *Monster Culture*, the role of monsters is key to the project as they symbolize disturbing hybrids whose externally incoherent bodies resist attempts to include them in any systematic structuration. Monsters, both as external icons of horror and internal fragments of the self, are inherently dangerous. They are a form suspended between forms and threaten to smash distinctions. Taking a knife to the confines of flesh, the project exposes a potent liminal space in which transformation, disfigurement, and mutation of one's own identity is possible, if not entirely inevitable.

Salber Williams

My House is Burning

My House is Burning is a devised autobiographical solo performance based on a script I wrote entitled *The Incidents*. Told through past interactions between family members, our housemaid, and friends, these memory vignettes give insight on my realities of growing up in Zimbabwe. A skeletal outline of my childhood home onstage becomes a metaphor for how my family and my country prohibited contact with the outside world. But the outside always gets in. Onstage, I explore how gendered and racial identities change via audio excerpts from oral history interviews conducted with diasporic family members, and projections of the American reality television shows that I watched religiously growing up. This performance asks whether change is really the threat and how it might liberate both me who embraces it, and the country and family I love, who still fear it.

ARTS & HUMANITIES

Alexandru Rosca

Freedom on Paper: An Inquiry into Romanian Communist Theater (1965-1989)

Through his 1974 philosophical-absurdist trilogy, *The Thirst of the Salt Mountain*, published during Nicolae Ceaușescu's dictatorship, Romanian playwright Marin Sorescu crafted a new paradigm of neomodernist theater known as 'drama of cognition' or 'existentialist drama of ideas.' *Iona*, *The Verger*, and *The Matrix* center on metaphysical questions about the human condition. These questions simultaneously exist both as illusions created through fiction and as reality unveiled through fiction. Sorescu's clever and subversive use of the Romanian language makes multiple interpretations of his trilogy possible. The trilogy can be read as an allegorical representation of Communist Romania, an investigation of identity in relation to the state, and as an instigation to question the abuse of power of the Romanian Communist Party. By means of a multidisciplinary mode of analysis, my Capstone project offers a new understanding of Sorescu's trilogy as an intricate object of study not only for theater, literary, and performance critics but also so for historians, sociologists, or political thinkers.

Fatima Maan

Humera

Set in an upper-middle class tuition center in Lahore in 2016, *Humera* is a full-length play that chronicles a chapter in the lives of three Pakistani teenagers from differing religious, cultural, and economic backgrounds. It examines their intertwined stories through the lens of religion and sexuality, and gauges the impact of such elements on the choices they make. *Humera* questions the treatment and perception of religious and sexual minorities across social strata of modern day Pakistan, and explores how the youth view these topics in light of the clash between their religious education (passed on to them by their parents and society) and their more open-minded and ambiguous interplay with peers. Filled with dark humor, *Humera* offers a snapshot of shifting mindsets, inner conflict, and taboos around spirituality and love in an intensely diverse community.

Laura Waltje

In The Garden When It Happened

The timeline is blurry. How do I heal? Who has culpability? Who could have protected whom? And does it change anything? In *The Garden When It Happened* is a memoir and a staged poetry reading, where I present some answers to those questions and more questions that came up while I

tried to answer them. The piece examines how feelings of culpability in cross- and trans-generational trauma effect our ability to move past a traumatic event.

Alexandre Bagot

can we talk?

can we talk? paints a portrait of one man's self-imposed isolation in the face of interpersonal difficulties. Through the use of projection and found footage, the work raises questions about the omnipresence of media in the modern world, and its possibly deleterious effects on human interaction. As a silent monologue, the piece garners influences from dance theater and one-man shows, and investigates the relationship between socialization and mental health. It explores ideas of dreams, of memories, of space, and of bodies, and attempts to dive into some of the actor's personal anxieties.

VISUAL ARTS

Shamsa Al Dhahry

Fibers

Change is important and essential to the development and survival of any country. The UAE's drastic and dramatic change in an extremely short period of time while is undeniably amazing, may have some backlash. With the large number of expats outnumbering the local population, Emiratis are faced with a culture shock unsure of whether to accept change and modernity while clutching on to culture and tradition. There's this feeling of disorientation as the Emirati population feel like strangers in their own homeland. The struggle we are facing as a community is finding a new balance in this clash of "old" and "new."

Through my own interpretation and art, I am using the palm tree as a medium and vessel to examine these complex topics by contrasting the past and present.

I question and struggle to understand how Emirati society is adjusting to this constant change and development.

Souhail Wardi

Chameleons

In the face of stereotypes, prejudice and rising Islamophobia, what would you do? Would you make yourself as small as possible, or remain confident in your own identity? How do we Muslims react? When we do not embrace our identity as Muslims, we feel uncomfortable with who we are and leave a blank canvas upon which others can paint whatever misrepresentation and stereotypes they like. We are students, artists, teachers, friends, neighbors,

health workers, entrepreneurs... and more. We are multifaceted and colorful. Why do we then make ourselves invisible? Let us be bold. Let us be confident.

Agustina Zegers

س

I touch you in the lung and your gut disassembles. My queer progeny an exhale, plasticbody souped in the ocean. Flax made flesh.

Sherina Al Sowaidi

Fibers

The UAE has experienced rapid transformation and witnessed an immense cultural shift in its way of life. This abrupt change has created tension between the past and present generations. Through networks of intertwined yarn, I manipulate the volume, density and movement of the (social) fabric and attempt to depict the complexities of culture and identity in the face of this rapid change.

ART AND ART HISTORY

Noor Almehairbi

Ebb & Flow رزج و دم

Ebb & Flow is an exploration into the instabilities we may face in our everyday modern society. Coming from a city where constant construction and demolition takes place, Abu Dhabi is filled with the anxieties of change but also the fear of remaining stagnant. Today our metropolis urges to constantly transform, while simultaneously finding itself in moments of grief of what has become forgotten and replaced. Yet even neglected objects in a ship graveyard take up new transformative landscapes of their own. They may lose their frame and structure or intersect into a greater entanglement with one another. Nothing truly disappears; whatever has disappeared may return to us as flotsam and jetsam.

Sophie Arni

Rethinking the East-West Binary: Essays on Transcultural Porcelain, 16th-21st Centuries

How does the binary of East and West affect the history, analysis and display of transcultural works of art? More particularly, how does the binary hinder our perception of porcelain, a medium that emerged from trade exchange and has been widely appropriated to suit various cultural tastes? Through three case studies of porcelain objects, I reveal the shortcomings of polarizing

porcelain through its eastern and western influences and provide alternative theoretical frameworks for studying cross-cultural exchange in the decorative arts. The first object, a Jingdezhen bottle gilded in London in 1585, will be defined through its framing abilities. The second, a Sèvres chinoiserie basin from 1790, will be understood through its mimetic faculty. The third, a Jingdezhen vase commissioned by Lebanese artist Raed Yassin in 2012, will be analyzed as a simulation of the exotic.

ENGINEERING

CIVIL ENGINEERING

Maryam Al Mansoori

Paul Ha

James Gardner

Water Treatment Facility in the Northern Emirates

The Northern Emirates faces unique and challenging water resourcing; with some of the most limited availability in ground water, and a water usage of twice the world average at 550 L per person per day, the UAE must have highly efficient waste water recycling systems. This project outlines a detailed design of a recycled wastewater treatment facility located in the Northern Emirates of the UAE including the water treatment process, structural housing, and road access ways with parking facilities. This is documented with design drawings and analysis alongside the project management methods undertaken to complete the project. The design chosen is a multi-stage water treatment process modelled on a traditional sewage treatment plant; wastewater undergoes primary and secondary treatment with the option of adding additional tertiary treatment. Two designs were considered for treatment; the first met the minimum requirements of World Health Organization (WHO) and the second met the UAE requirements which surpass those of the WHO. Of interest is the suggestion that treated effluent will be of a high enough quality to be used in crop irrigation. Designs were carried out in accordance with primarily the Abu Dhabi Municipal Standards, the Environmental Protection Agency (EPA), American Society of Civil Engineering (ASCE), and the American Concrete Institute (ACI) codes.

ELECTRICAL ENGINEERING

Hassan Nahas

Asfandiyar Sirhindi

Indoor Localization

Localization is the process of locating a node in a network through the use of anchors, points with a predetermined and known position. Various techniques exist and are employed depending on the desired accuracy and available resources. These include Received Signal Strength (RSS), Time of Arrival (ToA), Time Difference of Arrival (TDoA) and ToA-Angle-of-Arrival Hybrid. The problem of localization poses a computational challenge, particularly in low energy systems with a large number of nodes. Mathematical tools are being developed to tackle this challenge including Randomized Extended Kaczmarz. The purpose of this Capstone is to

design and implement a localization system appropriate for an indoor system of robots to produce a stable network with decentralized processing. To do that, it will be important to minimize the number of computations necessary, making mathematical tools like Multidimensional Scaling, Multilateration and Randomized Extended Kaczmarz important, especially when dealing with the uncertainties of the real system. Range-finding technology based on Ultra-wideband (UWB) technology will be used to obtain the distances between the nodes. Localization will then be decentralized, allowing for cooperative localization to help identify tags further away from the anchors.

Vasko Lalkov

Lizard Tail Autotomy: Biomimetic Structure

Autotomy is the process by which some lizards detach part of their tails in order to distract predators when they feel threatened. These lizards often have aspects that draw a predator's attention, such as being brightly colored, having sharply contrasting colors or patterns, or a moving tail when the lizard is otherwise still. Lizards that can detach their tail have "fracture planes" spaced regularly down the length of the tail that are either between vertebrae or in the middle of each vertebra, depending on the species. It is at these specific planes on the tail that autotomy can occur. Skin, muscles, blood supply, nerves, and bone separate when the tail is dropped. After it falls to the ground, the tail starts to flex on the ground, giving the lizard a chance to escape while the predator is focused on the moving tail. This design project is dedicated to producing a biomimetic structure replicating the process of lizard tail autotomy. To achieve this biomimetic task, the microstructure of goosebumps-like sheets was firstly designed and fabricated. Next, a triangular structure like that patterning the fracture planes in lizard tails was fabricated and assembled. Finally, the actuation of both the planar and three-dimensional triangular structure was realized and used to numerically characterize the prototypes for further research.

Pablo Pacareu

Pedro Zufiria

Development of a Red-Team-In-a-Box hardware platform

The modernization of critical infrastructure has enabled advanced monitoring and control capabilities, through the inclusion of microprocessor computing systems using commercial-off-the-shelf integrated circuits and commonly used protocols. Therefore, these systems are

susceptible to cyber-attacks. The aim of the project was to identify possible entry points in order to fortify said systems. An advanced sensing platform was developed, which could facilitate physical penetration testing of industrial control systems. The platform had its own processing capabilities and operated on a battery in order to achieve autonomy. The sensors used were integrated on a custom-built PCB. The goal was to maximize the information collected by the platform, while minimizing the power consumption and the cost. The resulting platform was able to fingerprint industrial devices, eavesdrop on communications and collect other information needed to generate a detailed map of the surrounding environment of the industrial control system.

Martin Slosarik

Vasily Rudchenko

Secure Chip Design Flow Documentation

The purpose of this Capstone project was to synthesize a Register Transfer Level (RTL) description of the ARM M0 Cortex Microprocessor and create its physical implementation in the GDSII format. The process tested the SAT Attack Resistant Logic Locking (SARLock) logic encryption method. Encryption was applied onto the RTL description of the processor. Logic Encryption is necessary to prevent illegal chip printing at untrusted foundries and protect chips from insertion of Trojans into the netlist by outside entities. SARLock specifically adds an extra layer of security over typical logic encryption to ensure that the chip can only be decoded with a brute-force attack.

The Capstone involved all steps of the digital design flow. It included specifying an initial project outline with the Project Requirement Document (PRD), the Architecture Specification Document (ASD), and the Microarchitecture Specifications. ARM provided our research group the RTL description of the processor. Encrypted RTL was synthesized with Synopsys DC into a netlist. Synopsys VCS was used to verify correct functionality of the design. Furthermore, the implementation was verified using Xilinx Spartan FPGA.

The netlist was translated into its physical implementation via the back-end design process. The steps of the process included placement, routing, physical verification, timing closure, IR analysis, and RC information extraction. The tools to perform the back-end design were Synopsys for placement, routing, and optimization, as well as Cadence for GDS merging and verification. The final output format was GDSII, which is a standard format for exchange of VLSI designs. The design was printed at a foundry called GlobalFoundries and the physical chip was tested to ensure correctness of operation.

GENERAL ENGINEERING

Monika Filipovska

Transportation for Smart Cities

Transportation for smart cities, significantly based on modern data science and traffic analytics, is a field almost entirely dependent on the availability of accurate knowledge of real-time traffic conditions. Accurate data representing real-time traffic conditions is necessary for performing real-time traffic analytics, whose applications can range from network-wide signal control, real-time trip planning and forecasting, to traffic incidents response. However, traffic analytics is often encumbered by the fact that real-time data is typically unavailable for large portions of the urban networks at any given instant. Thus data is discontinuous, interrupted and quite sparse to reflect the real-time traffic state and to be useful for any real-time applications. Therefore, urban traffic state estimation has become the core challenging problem for practitioners and researchers in the field. The goal of this Capstone work is to identify and calculate spatio-temporal correlations in traffic flow that can be used for real-time traffic state estimation. The project focuses on developing a model for real-time traffic data reconstruction that allows for using the sparse data from instrumented road segments to accurately estimate the traffic conditions for segments that lack instrumentation. This model is to be based on available complete data from sensors that do not provide real-time sensing, to be applied onto sparse real-time data. The main focus of the project is performing data reconstruction for a single, simple, isolated road section that can further be expanded to fit complex road sections or traffic networks. This project is grounded in the idea that an approach based on probabilistic graphical models such as Markov Random Fields (MRF) would be a natural fit for traffic state estimation (TSE). The proposed approach is an MRF-based model that captures traffic conservation laws and traffic correlations and allows for traffic state estimation. The model is expected to perform in real time, that is, in under one second, and provide accuracy with an error lower than the current benchmark for TSE approaches, which was established at 6.7% calculated as Mean Absolute Percentage Error (MAPE).

ENGINEERING

MECHANICAL ENGINEERING

Hind AlTantawi

Lizard Tail Autotomy: Biomimetic Structure

Autotomy is the process by which some lizards detach part of their tails in order to distract predators when they feel threatened. These lizards often have aspects that draw a predator's attention, such as being brightly colored, having sharply contrasting colors or patterns, or a moving tail when the lizard is otherwise still. Lizards that can detach their tail have "fracture planes" spaced regularly down the length of the tail that are either between vertebrae or in the middle of each vertebra, depending on the species. It is at these specific planes on the tail that autotomy can occur. Skin, muscles, blood supply, nerves, and bone separate when the tail is dropped. After it falls to the ground, the tail starts to flex on the ground, giving the lizard a chance to escape while the predator is focused on the moving tail. This design project is dedicated to producing a biomimetic structure replicating the process of lizard tail autotomy. To achieve this biomimetic task, the microstructure of goosebumps-like sheets was firstly designed and fabricated. Next, a triangular structure like that patterning the fracture planes in lizard tails was fabricated and assembled. Finally, the actuation of both the planar and three-dimensional triangular structure was realized and used to numerically characterize the prototypes for further research.

Ting Che Lin

Witold De la Chapelle

Xiao Lu

Product Design for Manufacture, Reliability and Marketing Of a Device to Predict Plant Strength

The objective of the Capstone was to substantially improve, through two iterations of designs and improvements, the prototype device that measures crop strength. The first iteration of the device was designed during the first semester and tested in the field. Based on the feedback of the first iteration, the second iteration of the device was designed and built. Able to measure crop strength accurately, the improved device allowed for greater confidence in assessing the data. With an intuitive graphical interface, the device enabled faster rate of data collection. An ergonomic handle allowed users to perform measurement without bending their waists, thus reducing the risk of musculoskeletal disorders and further improving data quality. A mini-

malistic design with rugged buttons contributed to the robustness and lifespan of the device. The improved device will allow farmers to breed more robust crop varieties and reduce wind-induced crop failures that cost billions of dollars of losses annually.

Christopher Luwanga

Afeef Sahabdeen

Passive ADCS for CubeSat

One of the main constraints with CubeSats is that of power. An Attitude Determination and Control System (ADCS) is just one of the many systems that may require power to operate. We want to design an ADCS that does not use power at all, but is solely based on the laws of physics and mechanics. Each of the three methods described here have been used on larger satellites, and on a few recent CubeSat missions. However, most of the satellites that used some passive stabilization system used it secondarily or at least with some active stabilization systems that can be turned off. For our project, we'll use entirely passive methods. By manipulating the geometric, mass, and magnetic properties of the CubeSat, the CubeSat can be designed to auto-correct its attitude. We analyze aerodynamic forces, magnetic hysteresis materials, and gravity gradient booms for use in controlling the attitude of the CubeSat. However only the use of gravity gradient booms (GGB) to align the CubeSat length with the nadir vector is demonstrated in most detail in this paper. The GGB method only requires a calculated mass distribution in order to stabilize the system. For the aerodynamic forces design panels deploy on the (-Z face) faces, and the panels act like airfoils generating stabilizing torques as well increasing drag on the satellite. Increasing drag is also useful because it increases the rate of CubeSat orbital decay; NASA estimates that over a third of CubeSats may stay way too long after their mission such that they pose a space debris problem. By using this panel deployment system we can hasten the orbital decay and allow the CubeSat to deorbit quickly. Further, the design resorts to magnetic hysteresis materials to eliminate the spin of the CubeSat by taking kinetic energy of the spinning CubeSat out through hysteresis losses. The ferro-magnetic materials can be magnetized by the earth's magnetic field, thus no current is consumed for this process.

Said Siderite Abdallah

Tshering Gyaltsen

Jean Nyaguthii Edwards

Concentrated Solar Powered Stirling Engine for Reverse Osmosis Desalination and Pumped Storage Hydroelectricity

Energy systems play a principal role in social and economic development, as well as welfare of the people, from grassroots all the way up to the global level. In recent years, there has been a rise in demand of renewable energy. This has led to an increase in research in this field, to come up with new innovative ways to satisfy this need [1]. The most common form of renewable energy is solar energy, which is tapped by converting the sun's rays of light into electric or thermal energy. It is the cleanest and most abundant form of renewable energy [2]. Furthermore, in most parts of rural areas, there is a limited availability of fossil fuels such as Petroleum and electricity whilst there is a high demand of water for household needs. Although, countries like the United Arab Emirates where the access of petroleum is not a problem, they still need to find alternative ways to pump water in the rural areas because of the negative environmental impact of non-renewable energy sources such as the emission of carbon gases. The purpose for this project is to develop a Solar Stirling Engine Pump that will use solar energy as the power source. Furthermore, in the bigger picture the project will look at the solar desalinization by using reverse osmosis, pumped storage hydroelectricity, and electric generation to sustain the pump. It will focus on a new innovative way to capture solar energy, and will apply existing Stirling engine technology for optimal results.

The Pumped Storage Hydro-electricity (PSH) will be performed along the Hajar mountains in the UAE. Two Francis turbines were used in the process each having a capacity of 55MW. The height of the upper reservoir is 100m having a length of 300m. The energy from the PSH will be used in peak demand period in the UAE. On the other hand, the Reverse Osmosis (RO) desalination a spiral membrane was chosen with a plunger pump proving the high pressure of about 70 bars. For the Energy Recovery Device (EDR) the Francis turbine was the best candidate, which will help to recover about 40% of the energy that will be fed back to the incoming sea salt water.

Gabriel Figueroa Torres

Impact of infection and treatment on epigenetic profiles of malarial children in Burkina Faso

Malaria is a major public health problem with 3.3 billion individuals at risk in tropical and subtropical regions of the world and an estimated 438,000 deaths in 2015. Major advances have been made in understanding the epidemiology and pathobiology of the disease. However, little is known about the genetic and epigenetic mechanisms modulating variation in host immune response against the parasite. In this project, we investigate variation in genome-wide epigenetic profiles of circulating immune cells of children from Burkina Faso before and during infection, and after treatment using approximately 800,000 epigenetic markers. Our results revealed major and statistically significant changes in the epigenetic profiles of children in response both to infection and treatment and the genomic regions underlying these changes. These results highlight the role epigenetic factors play in modulating response to malaria infection.

Alexandra Gurskaya

Characterisation of clade communities of Symbiodinium in five dominant coral species from Singapore

Singapore marine waters are characterized by high turbidity due to riverine sedimentation input and widespread coastal development. In corals, over 90% of metabolic energy is produced by photosynthesis of symbiotic algae that live within the coral. Such high-turbidity, light-limited environments as Singapore thus represent marginal conditions that should limit reef development. However, over 60 coral reefs have been reported across Singapore, containing at least 255 species of hard corals. Corals' sensitivity to environmental conditions varies with different coral-associated symbionts. Given the relatively stressful environment, it is likely that Singapore's corals primarily harbor stress-tolerant symbiont types, but little is known of coral-symbiont associations in Singapore. This study used next-generation sequencing to explore the composition of symbiont communities in five dominant coral species collected from six coral reef sites across Singapore. The results of this study provide important insights into how coral communities respond to stressful conditions in areas experiencing high sediment loads.

Sarah Hassan

Novel Targeted Inhibition of Mutant p53 Amyloid Aggregation Restores Tumor Suppressor Function in Pancreatic Carcinoma

Mutations in p53 are severely deleterious and account for more than 50% of all human cancers. Recent research has shown that mutations in p53 lead to conformational transitions that propagate protein aggregation, due to the exposure of an aggregation-nucleating region of the protein. Mutant p53 can gain the ability to form aggregates with its wide-type form and other paralogs, such as p63 and p73, which exerts a dominant-negative effect on wild-type p53, leading to tumor metastasis. Here we show that mutant p53 (R248W) aggregates are amyloid in nature, forming β -sheet rich fibers and oligomers. Three classes of designed peptides derived from the mutant aggregation segment of R248W are shown to inhibit p53 aggregation in spectroscopic studies and restore tumor suppressor function in MIA PaCa-2 cells. Moreover, novel alpha-helical mimetics, which have been shown to inhibit Amyloid Beta (A β) in Alzheimer models, also inhibit p53 aggregation and restore tumor suppressor function in cancer models, which demonstrates the effectiveness of using functionalized amyloid drugs as mutant p53 cancer therapeutics.

Clara Palazzolo

Screen for new anthelmintics derived from the soil bacterium *Bacillus thuringiensis* using *Caenorhabditis elegans* and *Pristionchus pacificus* as model organisms

Parasitic worm infections affect 24% of human population, livestock, and crops. During my Capstone project, I used the free living, non-pathogenic worm *C. elegans* as a model system to screen for new bio-active compounds that target worms and help overcome resistance seen against current drugs. I participated in screening a library of 300 *Bacillus thuringiensis*, a spore-forming bacterium that synthesizes crystal Cry and Cyt proteins. Bt virulence factors are natural toxins safe to humans; they have been used as bio-insecticides and some are known to be toxic against nematodes, constituting a promising alternative to chemical treatments. The Bt library was isolated from soil ecosystems in Lebanon and the UAE. We found 52 strains that hinder the survival of worms and we are characterizing the toxic factors by using plasmid and protein profiles and deep genome sequencing. The identified molecules will potentially have a considerable impact on agriculture and human health.

Thinh Tran

Determining the identities and functions of missing temporal transcription factors in the *Drosophila* medulla

The sequential expression of transcription factors (TFs) in neural progenitors activates or represses different genes, and thus generates different types of neurons from a homogenous pool of stem cells. In the fruit fly, neuroblasts that give rise to the optic lobes sequentially express five TFs to specify different neural fates. However, two TFs in the cascade fail to regulate each other's expression, in contrast to the other three TFs, which suggests that there exists at least one missing TF that acts between them. This study aims to identify the missing TF(s) through a genetic screen. After testing the potential of ~190 TFs for being part of the temporal cascade, I identified three primary candidates, Nuclear factor Y (NF-Y), homeobrain, and max. The knowledge of the missing TF will allow us to further examine how temporal patterning progresses and contributes to the generation of neuronal diversity in the optic lobe.

CHEMISTRY

Nadine Ahmed Sherine Ibrahim

Simulating the Activity of Hepatitis C Virus (HCV) RNA polymerase (NS5B)

Our goal is to gain insight into the mechanism of HCV RNA replication, and explore the effects of different inhibitors on that. It was found that NS5B undergoes a conformational change during replication. Furthermore, evidence has shown the presence of a "flexible loop," which allows the polymerase to initiate at the terminus of the RNA genome and then transition to a swift elongation state, thereby replicating the entire genome. Therefore, we plan to address these problems through defining the structural rearrangements necessary for NS5B to carry replication, as well as demonstrating the structural effects upon binding different inhibitors. Understanding the molecular and dynamic details of the functional states is essential in developing drugs that target to bind in different states of the protein. Our simulations will also help to understand the physical chemistry principles of allosteric inhibition mechanism in general.

Ieva Liepuoniute

Photochromism of Dihydroazulenes: Investigating the Reaction Mechanism and Thermodynamic Properties in Solid State

"The ultimate goal of this study is the design of efficient molecular switches where the properties of the material can be controlled by using light. We intent to obtain such photoswitches by tuning the properties of pyridospiropyrans. Pyridospiropyrans are positively charged molecules and exhibit photochromism in both solution and in the solid state. Photochromism in pyridospiropyrans is based on UV-light-induced equilibrium between a yellow-colored closed form and a red-colored open form. Ultimately, we aim to identify a negatively charged species that would enable kinetic stability and extend the lifetime of the photoresponsive material.

In the long term, pyridospiropyrans can be used as media for storage of information, computing, and optical devices. Some of the most promising applications are the photocontrol of protein conformation and enzyme activity, ion detection, and photoresponsive nanoparticles."

Karolina Uchman

The Construction and Structure Determination of DNA Nanomaterials: the Fused AB Tensegrity Triangles with a Connecting Duplex

Structural

DNA nanotechnology combines the branched DNA junctions and the concept of sticky-ended cohesion to create self-assembling macromolecular architectures.

We report the successful construction, crystallization and structure determination of three-dimensional DNA nanoconstructs designed to contain two molecules per asymmetric unit cell. This goal was achieved by employing a DNA motif called the fused tensegrity triangles with connecting DNA duplex. The X-ray crystallography studies revealed the assembly of the nanoconstruct in a designed unit cell. The project highlights the programmability of DNA and the capacity of DNA motifs to self-assemble into large crystalline lattices. It is also the first instance of an electron density being detected within the inter-triangle space of the self-assembled three-dimensional DNA crystals, hence making it a promising advance for the application in the organization of molecules in the nanoelectronics, developing scaffoldings for structure determination of biomolecules as well as the use in the host-guest chemistry.

Batu Aytemiz

Automating the Dynamic Balancing of a Multiplayer Competitive Game Using Data Aggregated from each Play Session

In competitive games one of the most important values is balance. Balance refers to the overall relative strength of the tool offered to the player, whether it be characters, move sets, or weapons. In a perfect scenario each tool is balanced relative to the other tools offered, ensuring each tool is viable for competitive gaming. This is usually not the case however. The Capstone aims to solve this problem by automating the balancing system. Currently, designers in the industry update the game every few months to tweak the power levels. My Capstone will switch the designers for a computer. The computer will analyze the data after each game, and make necessary changes. For example if character A is winning 90% of the time it will get weaker, and character B who is winning 10% of the time will get stronger until they are close to 50%.

Moiri Gamboni

Forgetful Data Structures for Text

While data loss is considered harmful in computer systems, we argue that forgetfulness is a tool which can be used to achieve data privacy, plausible deniability, and the right to be forgotten. We extend the “forgit,” a forgetful data structure which can store numerical and image data, to accommodate text data. Some forgetfulness properties satisfied by numerical and image data cannot be achieved in text due to the lack of a simple way to rank the importance of words or letters in a text. We relax some of those required properties to implement a text forgit that supports graceful and passive data loss, at some cost to storage and initial processing time. Some limited experiments showing the practicality of a text forgit are run. Finally, we show how future research could more accurately determine the optimal parameters for a text forgit.

Talha Javed

Platform Independent Annotation Tool for Morphologically Rich Languages

This project presents a graphical tool for syntactic annotation of languages with varying degrees of morphological complexities. Current available tools are mainly tailored towards English and do not provide adequate support for complex languages that express multiple

levels of information already at the word level. This tool is designed to be language independent and can be used to annotate dependency trees for a much wider variety of languages. The main feature of this tool is flexible tokenization, the ability to split words into subparts which allows for significant advantages when annotating morphologically rich languages. Furthermore, the tool includes error propagation which will highlight any probable annotation error based on projectivity checking and type specification. The front-end of the system is browser-based and built using standard web technologies; JavaScript, HTML, and CSS.

Chukwuyem Jotham Onyibe

Sentiment Analysis in Tweets

The topic of this capstone project is the detection of sentiment and stance in tweets. This task encompasses sentiment analysis, a subfield in Natural Language Processing. Working with individual tweets brings to light the possibility of achieving accuracy of sentiment and stance derivation when working with short texts that do not have features found in much longer texts like conversational structure and comprehensive sentences. The goal for this project is to build and test systems that automatically determine from a tweet the sentiment of the author, whether it be towards a target or not. The project will work with data supplied by SemEval for multiple shared workshop tasks with similar objectives.

Zbynek Stara

Design Study of New Techniques for Traffic Visualization

When visualizing urban vehicular traffic, maps and graphs are generally used to communicate with the users. This Capstone asks how efficiently users actually understand such methods by presenting an alternative visualization technique. We evaluate the technique through comparative user study, using various empirical criteria to determine when certain visualizations are more appropriate than others.

Koh Terai

Autofocus System for Cinematic Applications

This project will attempt to create an autofocus aid system for film sets. First we will have a camera assistant that manually focuses the lens during rehearsal. This data from the rehearsal will be analyzed and we will extract information such as, what is the object in focus?, how does it move?, does anything obstruct our view from the subject at any point? From this rehearsal data,

we will attempt to automatically focus the lens during the actual take. We will compare the current data and the rehearsal data to have the system focus the lens automatically without anyone touching it.

Jose Varias

A Framework for Time-Offset Interaction Applications

For my capstone project, as part of a team effort, we propose a time-offset interaction application (TOIA), an interactive digital dialogue system that supports both English and Arabic and combines natural language processing, information retrieval and human interactivity to allow time-offset interactions between users and virtual representations of real people. The objective of TOIA is to overcome the limitations presented by time and place in human interactivity, and preserve and digitally reproduce face-to-face two-dimensional dialogues between human and digital human avatars through time-offset interaction. The avatars exist in the form of collections of pre-recorded videos of humans, which play in response to users' questions and comments to the digital avatar. We aim to create this system in a way that would allow anybody to create an avatar of themselves and personalize the type of information that it contains and relays to the user. I will be working on creating a framework, or backbone, for the entire project for different parts to communicate with one another. I will also be creating the interface in which users can interact with TOIA, whether it is to create their story or to explore a story.

Patrick Sheldon Ko Wee

Driverless Travel with a Hoverboard Scooter through Computer Vision

This Capstone project explores the use of computer vision to aid driverless travel and routing through the use of a hoverboard scooter. The goal of this Capstone project is to come up with an integrated system of a hoverboard scooter and an app, using computer vision principles, that can be deployed in major indoor settings such as shopping malls or airports, to reduce travel time pressure, shorten travel times, and enjoy different activities without thinking of routing and logistics. In particular, this project brings this idea to fruition through four processes: hacking into the scooter hardware, where we use a Raspberry Pi to integrate sensors and cameras to the scooter; building a computer vision algorithm, taking into account computer vision architecture, image processing and related vision systems problems; developing an app for self-driving, using various successful software development frameworks; and conducting a user experience study.

MATHEMATICS

Casey Quinn Tirshfield

The Annotated Begriffsschrift

In my Capstone Project I aim to expand Frege's original paper "Begriffsschrift" with historical and philosophical background, providing extensive annotation to the original text—an effort intended to make the paper more accessible to present day mathematicians, philosophers, and computer scientists. By returning to the foundational sources of modern logic, I hope to give logic greater presence in the mathematics community while also making it more digestible for the non-specialist.

Quan Ho Vuong

Linear Algebra and Graph Theory

Spectral clustering approach to understanding the connection between data points is widely used in many fields. Spectral clustering algorithm has multiples choices of actual implementations (choices of Graph Laplacian, similarity graph and similarity function); each of which might be ideal for different datasets. Understanding which choices to choose potentially has significant impact for research across many different disciplines. Furthermore, I want to find applications for spectral clustering algorithm and apply the algorithm to other fields, such as finding protein complexes in protein-protein interactions.

Shelley Zhong

On Possible Shape of Numerical Range For Some Classes of Matrices

It is known that the numerical range of some classes of matrices is an ellipse. In On matrices with elliptical numerical ranges, Brown and Spitkovsky have discovered some matrices whose numerical range is a convex hull of more than one, but a relatively small number of ellipses. In a recent paper, Yating Yeh has identified some 2-by-2 block matrices whose numerical range is a convex hull of two ellipses. In this project, we study the shape of numerical range and hope to yield new results concerning shapes of the numerical range for some structure of matrices. We will also look into possible applications to some questions in quantum mechanics, in particular, quantum phase transitions.

Erika Linda Zogba

Computations in Characteristic Classes

A vector bundle is an mathematical object in topology and one of its properties is degree of triviality or non-triviality, which conceptually speaking, describes whether the bundle is twisted or not. Triviality is measured through characteristic classes, which are polynomials. There are different types of characteristic classes depending on the type of a vector bundle, also the vector bundles have different degrees, which adds to the complexity, and finally it is possible to perform several operations with vector bundles (e.g. Whitney sum and tensor product) and then measure triviality of the final product. There exist theoretical formulas for calculating many of these cases, however to actually obtain a result through them is extremely complicated and lengthy process, thus the aim of the project is to work out simplified versions of formulas for different degrees of bundles and operations, which would be useful to researchers.

PHYSICS

Ahlam Abdulghafoor Al Qasim

CubeSat for the Study of Terrestrial Gamma Ray Flashes

Terrestrial Gamma-Ray Flashes (TGFs) are bursts of gamma ray particles triggered by lightning events. These particles are channeled above Earth's atmosphere into outer space and cannot be detected from Earth. The leading model used to explain why this happens is the Relativistic Runaway Electron Avalanche. This model is being challenged by the most recent observations from satellites, suggesting that this model may not be satisfactory in explaining TGF production. The CubeSat project is a proposal to identify a useful experiment for TGF science, which can be integrated on a mini satellite. The instrumentation proposed is a 3U CubeSat and a gamma ray detector (10 keV – 1000 keV). The goal is to target TGFs connected to low energy gamma ray particles emitted from Earth and analyze data focused on this phenomenon to improve correlation studies with lightning and atmospheric parameters.

Jasmina Isakovic

Electromagnetic fields generated around neurons attract the T-cells in the central nervous system and initiate the autoimmune response: a parallel between multiple sclerosis and ischemic stroke

Multiple sclerosis (MS) is an autoimmune disease where a mutation in the gene encoding for a protein belonging to the NLR Family Pyrin Domain Containing 12 (NLRP12) enables the T-cells to penetrate the blood-brain barrier and

damage the myelin sheath. Expanding upon Dr. Bjorn Nordenstrom's "Biologically Closed Electrical Circuits" (BCEC), this paper utilizes computational electrodynamics and an in vivo MRI cell tracking study to hypothesize that negative charge on the surface of the T-cell gets attracted to the electromagnetic fields generated around the nodes of Ranvier and initiates the autoimmune response. By manipulating the electromagnetic forces of attraction between the cells, the MRI study showed that SPION labeled T-cell's mobility was impaired post-glucocorticoid receptor antagonization. The electrodynamic modeling determined the spatial and temporal progression of the electromagnetic field to quantify the nature of its interaction with the T-cell's surface charge and its role within the context of MS etiology.

Tiantian Zheng

Stochastic simulations of intracellular transport by teams of kinesin-1 molecular motors

Tiny strands of protein work as motors within living cells and transport large cellular components. Defects in these motors have been linked to disease. Kinesin-1 is one of these motors, and works in teams to transport cargoes. My work is a computer simulation of the behavior of such a team using known single-motor properties to predict team dynamics. From the results of our simulation, we construct a model which allows us to do the reverse: extract the properties of the individual motor through only making measurements on the team. This gives us a valuable tool for understanding transport properties of kinesin-1 in its native cellular environment, where it is only possible to measure properties of the team.

PSYCHOLOGY

Oliver Charles Heyn

The interaction of the visual properties of logos: How font and shape influence preference and attention

Logos are a fundamental aspect of the branding of any company, however few studies have focused on what may make certain logos more or less likable than others to consumers. In particular, for our study, we are interested in logos that encompass both a shape and a word written in a particular typeface. Previous research has discussed what may make certain shapes and fonts more likable than others, but no research has studied how the two aspects may influence each other in the rating of the logo as a whole, which is the primary focus of this paper. Furthermore, since previous research has suggested a correlation between fixation patterns and preference for an item, we will be collecting data using an eye tracker to monitor participant's behaviour and see how this relates to changes in the logo's presentation.

Yoo Jin Lee

Developmental Origins of Life Stories: Early Attachment and Life Story Themes

Humans organize their lives into a story consisted of a set of key events. Although some of the events included are common across individuals, the meaning individuals make of the events significantly vary regardless of their common backgrounds and personality traits. McAdams's hypothesized that early attachment may be an origin of these individual differences. The present study would be one of the first to test this hypothesis. This two-part study, each involving undergraduate participants and longitudinal data of 38-year-old participants, investigates the correlation between the degree of childhood attachment and four thematic meanings of life stories-- agency, communion, redemption, and contamination-- that the participants have expressed. The study hypothesizes that higher level of attachment security would positively correlate with agency, communion, and redemption themes while negatively correlating with contamination theme in life stories.

Dinara Mukhayarova

The Effect of Perceived Diversity on Subordinates' Need for Closure and Willingness to Comply with Power Tactics

In many workplaces today, diversity is ubiquitous. This study looks at the relationship between the level of diversity perceived by subordinates in their workplace and their "need for closure" - desire to obtain closure and avoid ambiguity. In turn, the level of need for closure in subordinates has been linked to their willingness to comply with different types of power tactics leveraged by their supervisors. We predict that there will be a strong relationship between perceived diversity and need for closure, moderated by the positive or negative beliefs that the subordinate has about diversity. These findings will shed light on the most effective ways for supervisors to interact with their subordinates in settings with different levels of diversity, possibly leading to improved organizational performance.

James Smoley

Consistency in trustworthiness judgments on own- vs. other-race faces: Effects of experience, implicit attitude, and voting behavior

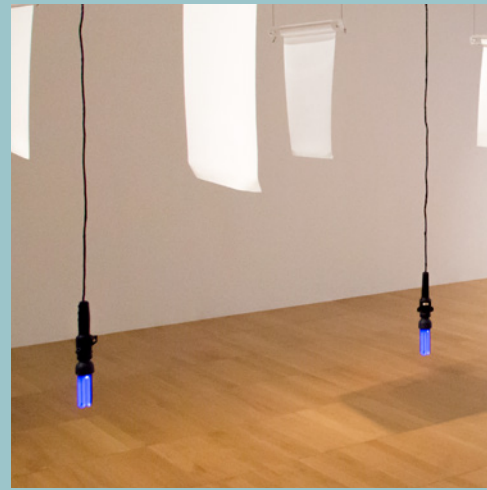
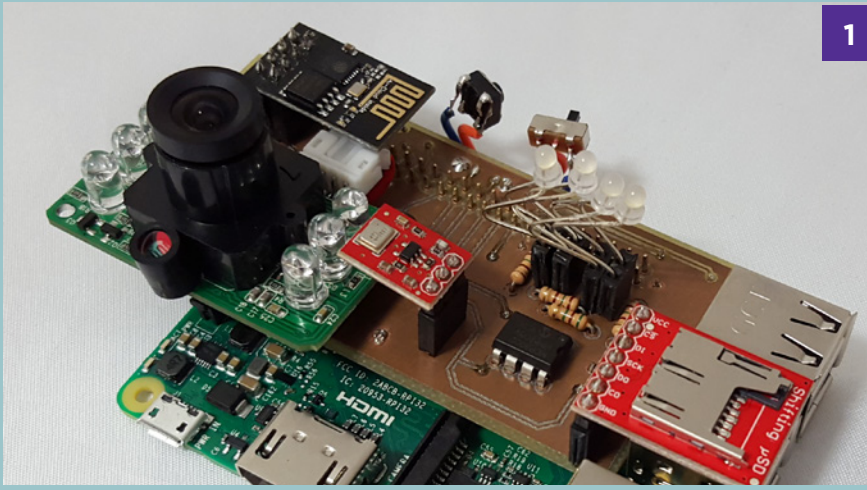
The ability to make quick and accurate judgments about the trustworthiness of a person is critical. Previous studies have shown differences in trustworthiness ratings for own- vs. other-race faces, with higher trustworthiness ratings for own- than other-race faces. However, it remains

unknown whether observers can reliably perceive the relative trustworthiness of various faces from other races. Here we will examine whether the ability to make accurate trustworthiness judgments for faces across different races may be innate or acquired, and whether it may be influenced by implicit biases or explicit voting behavior. We will conduct this online study in the US by comparing trustworthiness ratings for faces of the observer's own vs. other race, and examine whether the observer's individualizing experience with the other race, implicit attitude toward the other race, and voting behavior in the 2016 US election may influence the ability to evaluate trustworthiness for own- and other-race faces.

Kefei Wu

Do Different Types of Script Induce Differences in Hemispheric Lateralization During Reading? Evidence from a Cross Linguistic MEG Study

There is an on-going debate about the mechanism behind the hemispheric specialization for the M170 response during reading. The left lateralization effect commonly found in alphabetical scripts reading has been attributed either to the process of mapping the visual form of words to their pronunciation (the sound mapping hypothesis), or to a more general expertise acquired in the visual domain (the familiarity hypothesis). We tested these two hypotheses using a cross-linguistic design comparing the reading of a Chinese, a logographic script, with English. In order to isolate any script difference from the language difference, we used Pinyin, an auxiliary alphabetic system for transliterating Chinese words into the Latin script. Moreover, we also recruited a group of English speaking learners of Chinese. Chinese readers reading Chinese characters exhibited a trend towards left lateralization (as predicted by the familiarity hypothesis), which was not statistically significant (as predicted by the sound mapping hypothesis). A left lateralized response was obtained for both the English group and the learner group during Pinyin stimuli reading, but not during Chinese characters reading. In addition, the Chinese group showed the same trend for left lateralization during Pinyin reading (as predicted by the sound mapping hypothesis), but it was not statistically significant. Overall, the results were more aligned with the predictions of the sound mapping hypothesis, but we discuss the limitations of the study in terms of statistical power, and the ways which the conclusion could be reversed.





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SOCIAL SCIENCE

ECONOMICS

Eduardo Campillo

Decentralizing Mathematics:

Evidence of the Effects of Teacher Training and Textbooks on Student Learning from a Randomized Control Trial in Uganda

Since the Ugandan government's introduction of the Universal Primary Education policy in 1997, enrollment and attendance rates in local primary schools have increased and remain relatively high today (93% and 81%, respectively) (UNICEF 2013). This program, however, has led to many of the 256 public primary schools in Uganda being understaffed and lacking the resources needed to provide for all students. Together, these factors lead to a loss of interest in education, contributing to high repetition and dropout rates. This study is set in the Wakiso District in Uganda involving over 2,000 sixth grade students across 32 Primary Grade 6 classrooms. Through a randomized control trial, we analyze the impact of a treatment involving the distribution of textbooks and the introduction of a modified pedagogy on the educational attainment of the students. This pedagogy is based on a peer system that incorporates ideas of situated and experiential learning. We hope that this teaching method will increase the student's interest in mathematics by making the benefits of schooling more explicit and applicable to every pupil's context. Consequently, we expect the program will help increase attendance, reduce dropout rates, and improve the student's learning outcomes.

AlAnood Abdulnaser Alnaqbi

The Effects of a Value Added Tax on Economic Activity in The UAE

Value added tax is an indirect method of taxing consumption. The United Arab Emirates is a country with no previous consumption taxation methods on people living in the country. However, by 2018 the UAE will begin implementing a 5 percent value added tax on goods, with the exception of some staple food and essential services. By January 1st 2019, all GCC countries are expected to have implemented the fiscal policy which is believed to increase and diversify revenues. The paper aims to study the effects of such a policy, which will be estimated through a macroeconomic model with micro parameters. The model includes the goods and labor market that are created by maximizing the consumption utility function for households and production function for firms, subject to their budget constraints. By adding the value added tax to the model, the changes can then be studied in order to infer the effects of the policy and study the revenues that will be generated for the government.

Daria Dmitriyevna Baidakova

Non-cognitive abilities and productivity of the Emirati youth

I investigate the correlation between personality (Big5) and both GPA and monthly income of Emirati youth. Big5 personality traits such as conscientiousness and openness to new experience are positively correlated with GPA, whereas agreeableness is negatively related to GPA. Extraversion and neuroticism are negatively correlated to GPA with low statistical significance. As for monthly income, openness to new experience, agreeableness and neuroticism are correlated negatively with monthly income, while extraversion and conscientiousness are positively associated with monthly income but with low statistical significance. I also report correlations between personality and demographics such as gender and parental education. Most of the correlations are consistent with previous research, although I also find nuanced results. Parental education, for example, correlates positively with neuroticism and negatively with conscientiousness. Moreover, female Emirati youth are more vulnerable to stress and anxiety than male Emirati youth who tend to be more extraverted than their counterparts. I discuss how these results shed light on the importance of personality on implementing the various society-wide strategic initiatives in the UAE.

Mitali Banerji

Evaluating evidence for caste-based discrimination in India's Mahatma Gandhi Rural Employment Guarantee Act (MNREGA)

MNREGA was implemented in 2006 by the Indian government in order to "enhance livelihood security in rural areas by providing at least 100 days of guaranteed wage employment per year" to every eligible adult (Ministry of Rural Development). While the program has been praised for its innovativeness, inclusiveness and scale, its true effects are still not clear, for both its general benefactors as well as vulnerable groups. The question explored in this study is to what extent caste-based discrimination exists within MNREGA. I use the phase-wise roll out of the program to estimate how various caste groups benefit from the program through factors such as real wage, asset ownership, labour force participation and aggregate work days per year. Using a difference-in-difference identification strategy, I compare changes in aforementioned indicators across caste groups to find that there is significant discrimination against members of the lower caste, concentrated mainly in North India.

Cyril Cuda

Estimating the EUR-CZK Behavioral Equilibrium Exchange Rate: The 2013-2017 Price Floor

In November 2013 the Czech National Bank began to weaken the Czech crown by intervening in the foreign exchange market. Since then, the nominal rate has been floored at 27 crowns per euro. This paper estimates the exchange rate based on the behavioral equilibrium as implied by macro-economic fundamentals. In addition, the paper forecasts the rate for periods after the central bank's withdrawal from the price floor commitment.

Yuhui Dai

Tweet Sentiment and Stock Performance in Customer Facing Companies and Non-Customer Facing Companies

Social media are increasingly reflecting and influencing behavior of other complex systems. In this paper I investigate whether Twitter's tweet sentiment (aka: tweet sentiments) can forecast firm specific stock performances. In particular, I compare, in a period of 62 days, tweet sentiment's predictive power on stock performance in both customer facing companies and non-customer facing companies. I want to explore whether tweet sentiment correlates with individual stock prices and returns differently depending on whether the company is customer-facing or non-customer-facing. Therefore, I analyzed 5 customer facing companies and 5 non-customer facing companies. My hypothesis is the following: Negative tweet sentiment can more accurately forecast individual firm's stock performance in the future. Non-customer-facing companies' stock returns correlate with tweet sentiment more significantly than customer-facing companies do. However, my research found that in the short term, there is little predictive power of tweet sentiment on stock performance at an individual firm level, and the Efficient Market Hypothesis holds.

Arame Dieng

The Impact of Mobile Financial Services on Formal Savings Access: Panel Evidence from Kenya

The growing mobile phone penetration in Sub-Saharan Africa has provided opportunities for the birth of a new financial economy centered on the use of mobile phone accounts to store, send and withdraw money. These services have become essential in providing unbanked and underserved people with access to mainstream finances and have been claimed to increase financial inclusion. This

study examines the relationship between mobile money financial services usage in Kenya and the likelihood to mobilize savings in the formal financial sector. The findings show that registered M-Pesa users are more likely to save in banks, microfinance institutions and mobile-integrated banking services than non-users. This is mostly driven by the popularity of mobile-based banking services such as Mshawri that increase the convenience with which banking transactions are conducted. Results also reveal that a large portion of users still use informal saving groups despite already using a portfolio of formal savings products, an opportunity for financial regulators to create products that emulate the benefits provided by informal channels. Promoting savings in the formal financial sector thus entails expanding the scope of mobile financial services to address a broader range of needs and gradually convert simple users into banking customers, especially low-income individuals with limited access to banking or formal financial services.

Alioune Fall

The Function of Informal Loans in Expenditure Choices: Evidence from a Randomized Evaluation in Hyderabad—India

This paper examines the impact of informal loans on expenditure choices using panel data of 6080 households available from a randomized evaluation conducted by Banerjee et al. (2014) in 104 slums in Hyderabad, India. We find that microfinance institutions seem to crowd out informal lending. Moreover, switching to informal loans is associated with more spending on nondurable and temptation goods, while switching to microfinance loans is associated with more spending on durables. Our analysis suggests that microfinance loans come with the added expenditure discipline noted with traditional bank loans. However, switching to microfinance was also associated with more spending on temptation goods, which suggests that as the poor has more spending power, their expenditures increase, regardless of whether it is on temptation or durable goods. This implies that informal finance is not always as intuitive as assumed, and therefore deserves more academic attention, for the design of better-informed intervention models.

SOCIAL SCIENCE

Jacob Hartwig

Understanding the UAE Growth Trajectory: The Role of Human Capital Accumulation

This paper aims to explore the UAE's economic growth trajectory and analyze the role of human capital accumulation. In applying standard growth accounting methodology to novel data, this paper makes two contributions: 1) I provide a comprehensive sector-level analysis of the UAE economy from 1988-2015 and 2) estimate the contribution of human capital accumulation to economic growth in the UAE from 1975-2010. Using sector-level national accounts data, I examine the differential impact of capital and physical labor accumulation on the sectoral economic growth over the past two decades. I estimate the relative marginal productivity of different worker skill classes on the basis of administrative micro-level data from 2011. Under the assumption of constant relative worker productivities across time, I construct human capital stocks as unskilled-labor equivalents for the UAE and combine educational statistics from the Barrow-Lee data set with the World Penn Table in order to compare the growth contributions of human capital in the UAE relative to under economies. My results document a continued but declining dominance of the oil sector, underlining the historical importance of capital accumulation alongside the rising growth contribution from human capital in the UAE economy since the 1990s.

Almaz Kamalov

Oil Price Fluctuation, Volatility Spillover to Russian Equity Markets. Implications for Portfolio Management

"The objective of this paper is to study interaction between oil and stock market in Russia in terms of volatility spillovers at the industry level. The paper looks at nine different industries, namely, Transportation, Metal and Mining, Manufacturing, Financials, Telecommunications, Chemicals, Consumer Goods, Oil and Gas and Electric Utilities. Moreover, the study determines the best hedging strategy for stock portfolio against the risk of volatile oil returns. The paper uses a univariate GARCH model to capture the effect of the volatilities and shocks of the oil returns on different industry stock return volatilities.

The results suggest that there is a spillover of volatility to most of the industry stock returns, and optimal hedging strategies should be considered by investors."

Rene Kukk

Globalization and Risk Diversification

This paper argues that globalization affects risk diversification in equity markets. In addition to company- and country specific risks, a new type of risk has emerged, which cannot be diversified away by allocating assets among various countries. Some economies like the United States are relatively more affected by the global risk than others like the United Arab Emirates. I show this by constructing a global market portfolio, which explains an increasing proportion of risk in equity indices of the world's 20 largest economies. Notably, the increase corresponds to changes in world trade volume since the 1990's.

Issa Chaker Nasr

Financial Performance of Islamic and Conventional Banking:

A Comparative Study on the United Arab Emirates

Given the growing global demand for Islamic banking services and predictions that the industry will reach US\$3.4 trillion in value by 2018, the aim of this paper is to evaluate the financial performance of Islamic banks relative to conventional banks in the UAE during the period 2010-2015. Using Financial Ratio Analysis (FRA), a sample of 14 conventional banks was compared against 6 Islamic banks using twelve financial ratios that are broadly categorized into four groups: (a) profitability, (b) liquidity, (c) risk and solvency, and (d) efficiency. After determining their averages across each of the years, a T-test was used to determine whether there are significant differences between the two sets of banks. This study found a significant difference in terms of profitability, risk and solvency and efficiency favoring conventional banks but found no significant difference in terms of liquidity. A deeper financial analysis showed that Islamic banks, despite becoming increasingly more profitable and efficient relative to conventional banks, are seeing a worsening in their liquidity and solvency position as they increase their levels of investments. After addressing some of the key challenges Islamic banks are currently facing, this paper concludes by providing a set of recommendations that will allow these banks to compete more effectively with conventional ones moving forward.

Keren Neza

Impact of Mobile Money on Saving and Credit Mechanisms of Women in Rwanda

Mobile money is a mobile phone based money transfer system in Rwanda which grew at a phenomenal growth following its inception in 2010. I examine how access to

mobile money impacts the formal saving and credit instruments held by women. Analyzing data from three waves of individual data on financial access in Rwanda, I find that increased use of mobile money increases the likelihood of women to use formal savings mechanisms. In addition, I find the use of simple mobile money systems as a repository for funds is widespread among mobile money users. I find no evidence that mobile money increases the probability of women accessing formal credit instruments like bank loans and MFI loans. The results suggest that mobile money improves women outcomes by promoting formal saving mechanisms.

Gracious M Nyamupachitu

Blessing or Burden? Hosting the FIFA World Cup

This paper explores the economic impact of housing the FIFA World Cup, by running a cross-country growth regression with dummy variable analysis to isolate the hosting effect. A second difference-in-difference approach compares the host nations to nations that submitted a bid and were 1st runner-ups in the host selection process. Focusing on the developing countries, the aim is to provide insight into their possible growth trajectory had they not hosted the World Cup, thereby challenging prevailing ex-ante hypothesis which claim that hosting a world mega-event bolsters developing countries' economic growth. The thesis extends current research by providing an ex-post aggregate analysis of the hosting effect, covering all the games between 1970 and 2010. Results from the cross-country regression show that hosting has a significant negative effect on the growth of developing host nations. The difference-in-difference result shows that host nations' growth is incrementally better off than 1st runner-up bidders. The combined results suggest that on average, hosting has negative effect on growth for developing countries, however, should a country enter into the bidding process, they are better off winning the bid than not. This outcome gives empirical grounding to the critical opinions of economists such as Zimbalis, Baade, and Matheson, who have expressed that hosting world mega-events is a burden that may be detrimental to the already struggling economies of developing countries.

Kunal Thakar

Discrimination in The Online Markets of Abu Dhabi

We investigate the impact of seller race in a field experiment involving the sale of a used and a new mid-level smartphone on an online re-selling platform in Abu Dhabi. Photographs of the smartphone being sold are varied

slightly to suggest different race of seller. The impact is measured by calculating the difference in response to the different kinds of sellers. This difference in response suggests the presence of discrimination in the online markets of Abu Dhabi.

Paulius Urbona

Economic Integration and Choice of Corporate Debt Instrument

This paper focuses on the impact of economic integration on the corporate choice of debt instrument. Previous research on Western European countries shows that establishment of European Monetary Union increased firms' reliance on bond issuances in relation to bank loans and promoted the development of public debt markets. However, this paper provides evidence that effects of economic integration on debt financing decisions are not unequivocal and are dependent on country-specific and international factors, namely, market liquidity and risk-free rate. Using a sample of 1,100 public firms from 8 Central European and Baltic countries, the paper concludes that EU integration did not have substantial positive effects on corporate bond markets and the region's firms remain highly dependent on bank loan financing.

Zahra Urooj

Evaluation of Preferential Policy Treatments based on the employer size:

California's and Texas's job Creation and Analysis using Difference-in-Differences

By comparing several reforms in California and Texas using the difference-in-differences model, this paper evaluates the impact of several preferential policies on job creation among firms of different sizes in the two states. Small business, particularly the new ones, are seen as a vehicle for a major contribution to job creation. The alleged job-creating prowess of small business is often advanced as an argument in favor of preferential policy treatment for smaller businesses. But are the small businesses really worthy of the preferential policy treatment? Analyzing and deconstructing job creation patterns among firms of different sizes can have important implications for policy making. Jobs mean more than just monetary income, and could affect the lives of millions; thus, focusing on the right set of firms that maximize job creation is of utmost importance to the policy makers and the government. This paper concludes with implications for policy makers attempting to develop an environment conducive to any firm's growth and increasing job creation.

SOCIAL SCIENCE

Xinming Xu

An Alternative Model and Experimental Design for Choice Overload

Choice overload is a cognitive process in which people have a difficult time making a decision when faced with many options. A variety of experiments have been performed, intending to either prove or disprove the existence of choice overload. Still, there is a mixed result of success in these experiments. This paper attributes the inconsistency of the experimental findings to a lack of clear theoretical framework on this topic, as many theories remain to be largely descriptive and vague. This paper proposes that some consumers suffer from choice overload because they want to get the best attributes available in each good and their inability to do so creates dissatisfaction. The description of this mentality is written quantitatively, with the intention of spelling out the assumptions and introducing definitions that have been implied in many previous works. The paper consists of a theoretical section and an experimental design section, which describes the experimental procedures to test the hypotheses derived from the model.

Daniel J Mountcastle

Do Commodity Exchanges Result in Increases in Agricultural Exports? Evidence from the Ethiopian Commodity Exchange

In this paper we examine the effects of a commodity exchange on agricultural exports, and we look specifically at the Ethiopian Commodity Exchange (ECX) opened in Addis Ababa in 2008. We employ “Difference-in-Difference” analysis to examine the change in export quantity for “treated” agricultural commodities, i.e. commodities traded on the ECX, versus “non-treated” agricultural commodities, i.e. commodities not traded on the ECX. We find a statistically significant increase in agricultural exports for treated agricultural commodities. Next, we subject this finding to robustness tests against producer price, production quantity, and exchange rate data. Additionally, we check this finding against regional export trends using agricultural export data for Kenya. The statistically significant increase in agricultural exports withstands these robustness tests, and our findings suggest that commodity exchanges do result in increases in agricultural exports.

POLITICAL SCIENCE

Emina Osmandzkovic

Immigrants' Integration Experience in Seven EU Countries

Immigrants' Integration Experience in seven EU Countries in the wake of extreme popularity of right-wing parties across Europe that are spreading anti-immigrant rhetoric among their population, many experts have expressed concern that the current trends are associated with the failure of long-term integration. I am interested in examining the experience of immigrants in seven EU countries and the factors that influence their integration experience. In an attempt to construct a composite index of immigrants' integration experience through principle component analysis, as based on a 2012 EU survey on 7,500 individuals, I am examining (i) the effects of the historical geo-political connection between their country of origin and country of destination, (ii) the reason for migration, and (iii) the level of development of their country of origin. Within the integration experience index, I focus on the fields of employment, life satisfaction, and civic/political participation. I expect the level of development of the immigrants' country of origin and the existence of historical ties between the immigrants' country of origin and destination to have a positive effect on their integration experience. I expect no effect of their reason of migration on their integration experience.

Dubai Abdulhoul Alfalasi

Women's Political Participation in The UAE's Federal National Council

What do Emiratis think about women's political participation in the Federal National Council, and the Council's role and influence in the Emirati society? This research plan outlines a project that will examine the effect of gender role perceptions on Emirati women's political participation in the United Arab Emirates, particularly in the Federal National Council. The Federal National Council held its first elections in 2006, where only 1 Emirati woman was elected by the public. The following two elections, which were held in 2011 and 2015, also resulted in the election of only one woman by the members of the electoral college. This project will be the first to gather Emiratis' public opinion about women's political participation in the Federal National Council, and the underlying reasons behind the lack of support by the members of the electoral college for Emirati women who ran as candidates for the past three elections. The project concludes with a list of recommendations for the Ministry of Federal National Council Affairs and the General Women's Union.

Hanaa Alameri

Divorce Motivations for women in the UAE

What is the motivation behind the increase in divorces among Emirati women in the UAE? There has been a dramatic increase in divorce rates in the past decades, this has occurred concurrently with a dramatic rise of women in the workforce and greater education attainment. Yet, the reasons for the rise in this divorce rate remain understudied. Economic stability for women could be a reason, also the fact that there are more educated women now in comparison to the past. Government financial support to divorcee's may also be a factor that is driving up divorce rates. I will try to increase our understanding of this question by administering a survey experiment among Emirati women.

King-Him Joseph Chu

War of the Words:

Rhetoric and Political Violence in the Afghanistan Civil War

The bulk of research into civil wars has focused heavily on the causes of violence as well as the process of conflict, whereas relatively less attention has been given to what warring groups may say for themselves. We take publications by various mujahideen groups during a time period between 1985 to 1992 to conduct LDA (Latent Dirichlet Allocation) textual analysis to see trends and divergences in the narratives and rhetoric used during the conflict. From our individual-group and cross-group studies, we find evidence of a common conflict framing to be present, as well as topics and rhetoric that is unique to certain groups determined by their disposition towards issues and other groups. We see this study as providing further insight into the relationship between what warring groups do and what they say in times of war.

Dhia Fairus Shofia Fani

The Decisive Moment:

The Impact of Information on Human Trafficking and Legal Migration Procedure on Young Individuals' Migration Perception and Interest in Indramayu, Indonesia

Will information regarding human trafficking and legal migration procedure change young individuals' perception and interest to migrate? This paper examines the impact of a workshop held by NGO Kusuma Bon-gas providing information on legal migration procedure and human trafficking risk to 441 young individuals in six schools across the city of Indramayu, one of the ma-

jor migrant sender cities in Indonesia. Through pre and post workshop survey, this project measured the impact of the information delivered through the workshop. This research finds that the workshop increased participants' knowledge on the legal procedure of migration and human trafficking risk. However, the information intervention does not influence young individuals' views towards migration as a promising opportunity. The workshop also does not influence their interest to migrate.

Alyssa K Ferreira

Political Social Media Engagement in the Georgia House of Representatives Elections

Campaigns are an integral part of representative democratic processes. At the state and local level of American politics, where voter knowledge tends to be lower than the federal level, due in part to a lack of media focus, campaigns are key for not only mobilizing potential supporters, but also for spreading awareness of the existence of the election itself during non-federal election years. Since the boom of social networks, campaigns have increasingly utilized social media to disseminate information among targeted voters. This study seeks to explore the use of social networks in American politics through defining the relationship, if one exists, between the social media engagement of Georgia House of Representatives candidates and their electoral success.

Henry Johnson

Digital Fragmentation:

The Impact of Increased Internet Access on State Fragility

My Capstone examines the impact of increased internet penetration on two dimensions of state fragility: state legitimacy and group grievances. I look at 176 countries over 9 years, running regressions between the fragility dimensions and internet access rates and controlling for ethnic fractionalization, external intervention, border instability, GDP per capita, and youth proportion. I sub-divide the countries into ethnically-fractionalized and non-ethnically fractionalized nations, and into autocracies and liberal regimes. I find that increased internet access is strongly correlated with higher levels of group grievances in fractionalized countries and in autocracies, and with decreased levels of state legitimacy in autocracies. The correlation between internet penetration and increased group grievances is not significant in non-fractionalized nations or in liberal regimes. Interestingly, higher internet penetration is correlated with increased state legitimacy and decreased group grievances in liberal regimes.

Vladislav Maksimov

Silent Liberalization: The Spread and Effect of Local Popular Initiative in Texas

This paper concerns the diffusion of policy choices adopted through direct-democratic mechanisms by examining Local Option Elections in Texas jurisdictions between 2002-2014. Previous research on policy diffusion has been focused on institution-level mechanisms. I consider whether the choice to commence a popular initiative with the goal to liberalize alcohol-sales is related to similar choices made previously by residents of neighbouring jurisdictions, as well as the subsequent effect of this liberalization. I find that a neighbouring jurisdiction conducting an alcohol-liberalization referendum is positively related to the likelihood of a similar referendum being conducted in the subsequent election cycle. Similarly, an increase in the number of neighbouring jurisdictions with liberal sales policies is associated with an increased likelihood of a referendum. Finally, I do not find support for the conclusions of previous literature positing that there are costs in terms of road safety of adopting liberal alcohol sales policies: alcohol-liberalization is not associated with an increase in drunk-driving fatalities.

Nicoleta Nichifor

Blood Diamonds? Natural Resources and the Logic of Intrastate Violence in the Central African Republic

The existence of extractable natural resources in countries with weak central governments is often associated with violent conflict. This research paper provides a more fine-grained analysis of this relationship and attempts to explain why and when resource-rich regions in conflict-affected countries are able to maintain local peace. It focuses on the case of the Central African Republic (CAR). The CAR has two regions with extensive mining areas for diamonds, the Southwest and the East. While the Southwest is the most peaceful region in the entire country, the East is plagued with violent conflict. This project examines the three commonly-cited factors that can account for the differences between the two regions: 1) type of the dominant, local armed group, 2) local governance, and 3) infrastructure. By using quantitative and qualitative methods, this paper shows that the primary explanation is that the East remains less connected to the central government than the Southwest, both administratively, via local governance and physically, via infrastructure.

Toma Kirilov Pavlov

Pathways to Capitalism: The Lasting Effects of Early Post-Communist Transition Reforms on Socio-Economic and Institutional Development in 30 Countries

Advocates for “shock therapy”, promoting radical and rapid reforms, and “gradualists”, justifying a more careful and sequenced approach, dominated the conventional debate about the blueprints of post-communist transition reforms. Nearly three decades after the start of the transition to capitalism, I revisit the initial debate by using recent panel data on development indicators in order to evaluate the long-term effects of early market reforms in 30 post-communist states. Countries that reformed more rapidly and comprehensively within the first five years of transition are consistently associated with an increased growth in GDP per capita ten years later, while successive intermediate reforms do not produce a positive and significant outcome in the long-term. By conducting the same test on a pre-accession EU reform period with a smaller sample of countries, I confirm that the early post-communist period of reforms played a pivotal role for the continuous development of countries. The empirical findings are supplemented with an in-depth case study of Bulgaria, which supports the argument about the importance of early post-communist reforms.

Serhii (Sergiy) Rokachov

The Internet and Political Participation in Canada: The Effect of Internet Penetration on Voter Turnout in 2006, 2008, 2011, and 2015 Federal Elections.

The internet has increased public exposure to political coverage and provided more options for its users to gain understanding about issues and candidates. With internet technology, it has become less costly for citizens to gain political information and the knowledge they need to feel confident turning out to vote. This Capstone paper investigates the effect of internet penetration on political participation measured by voter turnout in Canada. The novelty of the topic consists in the fact that the internet is still a relatively new mass medium and has not yet been studied extensively in the context of Canada. The effect of the internet on voting behavior has been mostly studied across the United States, in particular focusing on the 2008 elections and Democratic candidate Barack Obama's social media strategies targeting young voters. A similar phenomenon is seen in the Canadian 2015 general elections with Liberal Party's candidate Justin Trudeau mobilizing young Canadians through online platforms.

Theoretical work hypothesizes and empirical studies show that internet coverage may have different effects on voter turnout, depending on the time period: early 2000s studies demonstrate a negative correlation between the two variables because of a small number of web content generators and a large number of internet users who were “passive consumers” of information. More recent studies show a positive correlation characterized by an active use of social media and the ability of internet users to create and share content through various platforms.

My research finds that there is indeed a negative correlation between voter turnout and internet penetration in Canada in the earlier stages of the internet, during 2006, 2008, and 2011 elections. The 2015 elections, by contrast, show a positive relationship between the two variables due to active use of the social media especially among younger voters.

Anna Serobyana

Refugees and Asylum Seekers in Europe: What Goes On When Government Goes Right

Contemporary European right-wing political rhetoric carries an anti-immigrant sentiment, with many far-right parties advocating for strict immigration laws. In light of the recent migrant and refugee crisis in Europe, right-wing parties and their anti-immigration campaigns have gained momentum across the continent. With promises of controlling the unprecedented flow of immigrants to Europe, some populist parties are set to win the upcoming elections in their respective countries. Is the electoral support for right-wing parties indeed associated with the increase in number of immigrants in Europe? Previous studies of right-wing electoral success focus on individual country cases. However, seeing the prevalence of similar xenophobic, racist, anti-Islamic and anti-refugee rightist ideologies throughout Europe, from Front National in France to Jobbik in Hungary, the phenomenon has proven to be cross-national. Controlling for GDP per capita, literacy and population density, I find varying answers to the aforementioned question on domestic (National parliamentary elections) and international (European Parliament elections) levels. My thesis reinstates the need and contributes to Europe-wide empirical research on the relationship between immigration and voter preferences.

Luke Stanley Tyburski

Governance and Mining Sector Investment in Sierra Leone: Chieftdom-Level Analysis

This paper pursues the relationship between local political competition and mining investment flows in Sierra Leone. I analyze whether subnational units (chieftdoms)

with higher levels of political competition, a reasonable indicator of governance, attract more mining investment, as the bulk of cross-national literature would expect. I further determine whether governance-based investing preferences are universal or distinct across source countries of investment. The interest in this latter analysis is foremost to contribute to the growing literature on the role of Chinese investment in Africa, situating Chinese investment within a larger pool of investor countries based on indicators of democracy, corruption, ease of doing business, and human development. I use an instrumental variable, the number of ruling families per chieftdom, as a proxy for political competition, and subnational analysis helps limit issues of external variation inherent to cross-national studies. The data is derived from a novel dataset of Sierra Leonean mining license payments and is complemented by fieldwork. Notably, I find divergent patterns of investor preferences. Chinese and South African investments decline as political competition increases, in contrast to Australian, Dutch, and UK investments that increase. China and South Africa fall below the median across global governance indicators, and I find with significance that the proportion of investment from sub-median source countries declines as the level of political competition rises. I argue that this conforms to the “familiarity” argument of investment, speculating that firms disproportionately invest in localities with similar business climates to their home countries.

Azhar Yerzhanova

War of the Words: Rhetoric and Political Violence in the Afghanistan Civil War

The bulk of research into civil wars has focused heavily on the causes of violence as well as the process of conflict, whereas relatively less attention has been given to what warring groups may say for themselves. We take publications by various mujahideen groups during a time period between 1985 to 1992 to conduct LDA (Latent Dirichlet Allocation) textual analysis to see trends and divergences in the narratives and rhetoric used during the conflict. From our individual-group and cross-group studies, we find evidence of a common conflict framing to be present, as well as topics and rhetoric that is unique to certain groups determined by their disposition towards issues and other groups. We see this study as providing further insight into the relationship between what warring groups do and what they say in times of war.

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SOCIAL RESEARCH & PUBLIC POLICY

Mahrah Saud Al Qasimi

An attempt to unleash potential: The case of the Sheikh Saqr Student Enrichment Program

The main goal of the Sheikh Saqr Student Enrichment Program (SSSEP), administered by Sheikh Saud bin Saqr Al Qasimi Foundation for Policy Research in Ras Al Khaimah, United Arab Emirates (UAE), is to help prepare students to undertake university studies in top-ranking institutions in the United Arab Emirates or overseas. A secondary goal of the Program, which is necessary to achieve the main goal, is to improve English attainment to the required levels to attend top-ranking universities abroad or locally. However, the statistics available show that the SSSEP has not been successful in achieving its main goal for the first cohort.

To explore this issue, this study employs in-depth, semi-structured interviews with four SSSEP staff and twenty-five SSSEP students to explore the differences between how the students and staff understand the program and its goals. By comparing narratives from these two groups, I identify how the current program overlooks important areas required for effective capacity building of students in Ras Al Khaimah (RAK). The study's results also highlights major concerns relating to the goals of the program, timing conflicts, and the importance allocated to parents' attitudes may be affecting the outcome of the program. In conclusion, I identify new opportunities for the program to engage in order to improve its effectiveness. As a result, this study serves as a basis for a comprehensive empirical evaluation of the SSSEP in the future.

Victoria Anatolyevna Blinova

Journeys to Empowerment: Women Leaders in the UAE

This paper examines the experiences of women leaders in the United Arab Emirates (UAE). This study works against hegemonic feminism, shedding light on lives of women leaders in the UAE. The purpose of the research is to learn what women leaders in the UAE believe to be the factors that allowed them to progress into their leadership positions. Through a combination of in-depth, qualitative interviews of women in top management who are recognized as leaders in the UAE, notes on interviews, and fieldwork notes on national and international women leadership conferences in Dubai and Abu Dhabi (2016), this paper analyzes common assumptions about factors that help women to obtain leadership positions in the

UAE. This paper situates findings in existing scholarship. Specifically, the paper confirms multiple points made by Eagly and Carli (2007), yet contrasts their findings on the notion of humility in women's leadership. Furthermore, this study complements existing findings on women's leadership, presenting the continuation of the first scholarly study on women leadership in the UAE.

Lauren Gail Clingan

It's Not About the Money: Negotiating Emirati Masculinity Amid State Promotion of Women's Employment

This study explores Emirati men's gendered identity negotiations in relation to state-promoted women's employment in the United Arab Emirates. Drawing from a series of qualitative, in-depth interviews, I adopt a social identity and gender constructivist analytical approach to understand intersectional Emirati masculinity in flux. I argue that state-promoted women's work challenges a codified ideal masculinity, encouraging men's aspiration to and practice of shared breadwinning, while impacting the gendering of childcare less. I also examine Emirati men's experiences of women-centered state policy, finding that their concern over status decline and support for women's work are not mutually exclusive. Especially evident in their relational comparisons to other men, awareness of international notions of modernity and stereotyped Arab masculinity pervade Emirati men's social identity construction. This study deepens understandings of intersectional Emirati masculinity and highlights conditions that challenge strict gender norms.

Rahul-Ionut Galan

Actions of Contention among Romanian Christian Orthodox Groups

During the past 2 years, self-proclaimed Christian Orthodox organizations from Romania became increasingly involved in political activities, organizing initiatives to change the constitution of the country, or block the construction of mosques in Bucharest. This paper uses the cases of three organizations – ASCOR, the Coalition for Family, and Father Arsenie Boca, in order to observe the way in which the popularization of social media shapes movements' political goals and strategies. Building on the theoretical models of Charles Tilly and Alberto Melucci, this project shows how by promoting a juxtaposition between the private and the public spheres of the society, movements use the Christian Orthodox moral imperatives in order to encourage collective action and raise support for their political initiatives. Therefore, the popularization of new technologies and the specific legislative context of Romania allow movements to promote their political goals by by-passing traditional democratic institutions.

Annalisa Galgano

Tomorrow's Neighbors:

Strategies for temporary refugee integration in Athens, Greece

In 2015, Greece became the gateway for an unprecedented migration influx into Europe. Between 2015 and 2016, over one million refugees and migrants entered Greece via the Mediterranean Sea. After Greece's northern borders closed and the European Union signed a migration agreement with Turkey in March 2016, an estimated 60,000 asylum seekers found themselves unwillingly confined in Greece, where the asylum application process can last from several months to over a year. This paper discusses the need for temporary refugee integration and seeks to answer the question: what are the main barriers to refugee integration in Athens, and in what ways can policymakers facilitate the temporary integration of refugees into the city? Data for this study was collected during two rounds of field interviews in Athens in the summer and winter of 2016. Respondents were sampled from three categories: refugees (n=46), direct service providers working for governmental or non-governmental organizations (n=27), and independent volunteers (n=13). These conversations revealed many barriers to refugee integration in Athens, including poor employment prospects, secluded refugee accommodation, and refugees' general reluctance to stay in Greece. However, several factors that could potentially improve integration prospects were identified, including English and Greek language learning, mentorship from other migrants, and stable accommodation options. This paper concludes with a series of policy proposals for the municipal government and non-governmental service providers to encourage the temporary integration of refugees in Athens.

Wafa Amina Junaid

Engineering Identity:

The practice and purpose of gendered marriage laws in the UAE

Despite global movements towards gender equality, the practice of gendered citizenship continues to pervade, particularly in regards to the regulation of women's marriage practices. This project seeks to explore the application and practice of gendered citizenship in the UAE, as demonstrated by marriage laws and discussions on marriage practices within the Emirati community. In particular, my project involves an in-depth analysis of Federal Law No.17 concerning citizenship which excludes the category of children with Emirati mothers and non-Emirati fathers. Although this law was repealed in 2011, this paper highlights the way in which the state continues to enforce

gendered notions of citizenship. This is examined through an analysis of institutions such as the Marriage Fund, public narratives in newspaper articles, advertisements and cabinet meetings as well as the agendas of national projects such as UAE's Vision 2021 and the Cohesive family 2021 pledge. Ultimately, my project concludes how the regulation of female marriage practices is integral to the process of state-formation as it is tied to the restriction of membership in communities.

Gulnozai Mansur

Powering Sustainable Growth:

Thesis on public acceptance of renewable energy policies in the UAE

The UAE government has now started a process of "transforming oil wealth into renewable energy leadership," and has set the long-term goal of a "transition from a 20th Century, carbon-based economy into a 21st century sustainable economy." Given the number of countries that are shifting from conventional sources of energy to sustainable ones, I find the question of socio-political and communal approval of utmost importance. Research on this must therefore inform and provide insight into public acceptance as well as critically analyze attitudes and engagement of Emiratis with renewable technologies. My research consists of three major parts: 1. Analysis of renewable energy policies in the UAE; 2. Assessment of people's attitudes towards renewable energy; 3. Policy recommendations to accelerate the transition to renewables. The social feedback can influence the policies that the government implements to promote the new sources of energy in the future. For this and many other reasons identified and extensively discussed in my research, I strongly believe that my Capstone will contribute to the creation of a benchmark for addressing the concerns and sentiments of the societies around the world that are also facing the shift to the renewables in the near future.

Lotus R Mohajer

Discourses on Women and Work in Oman

This research project qualitatively explores the experiences of employed Omani women lawyers and engineers and compares their narratives to dominant discourses in the policy sphere about Omani women's employment, and particularly sex segregation in the workforce, through semi-structured interviews. Discourse analysis was used to dissect the different ways in which the decisions of women in Oman are talked about and the implications of these understandings given broader sociological frameworks on sex segregation in the workplace and Oman's position in a global arena. Discourses on culture

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and the “traditional” mentality as well as the mindsets and importance of individual effort are reproduced in the narratives of the women, although only spoken about with regards to “other” women rather than being rooted in personal experience. The narratives of the women diverged, however, from the policy discourses with regards to the structural challenges faced in the workplace and the role of the family exhibiting a rich and actively negotiated process. This study then discusses the implications of the divergent narratives on women in Oman (such as missed policy opportunities) and how such macro level discourses, influenced by modernization and development narratives, trickle down to effect the lives of women. This study aims to counter exceptionalist narratives on the region and reveals far more complex lived realities of Omani women.

Sebastian Rojas Cabal

Conflicting Visions, Contested Lands: The Correlates of Land Disputes in southwest Colombia

What accounts for the rise in land disputes in southwest Colombia? In 1991 a new constitution afforded ethnic actors—indigenous peoples, as well as specific Afro-descendant and peasant communities—the right to own land collectively. Since then, land disputes have been a prominent feature of both the relationship among ethnic actors, as well as between these communities and the mining and agricultural sectors. This study uses a cross-sectional dataset of land disputes for the 2013-2016 period and merges it with information about the extension of land-acquisition aspirations by ethnically-defined communities, the presence of agro-industrial and mining projects in the territory, and other relevant socioeconomic and political variables at a disaggregated sub-municipal level. Analyses show that we are more likely to observe land disputes in areas with mining and agro-industrial projects, and where different ethnic communities have aspirations over the same territory. These findings indicate that disputes are more likely when legislation incentivizes ethnically-defined actors to conceptualize their relationship to territory as indivisible, which can also affect the prospects of extractivist development in the area. This carries implications for the Colombian government as it moves to implement the peace agreement reached last year with the Revolutionary Armed Forces of Colombia (FARC), in which questions about both the legitimacy of the country’s extractivist development project and the need to secure and dignify rural livelihoods feature prominently.

Farah Bassam Sayad

Negotiating Piety:

Lebanese Women in Sunni Islamist Movements

This research project explores the processes by which women participating in Lebanese Sunni movements engage with Islamist discourses that dictate gendered ideologies and expectations. Through in-depth, semi-structured interviews, I explore the complexity of women’s own understandings and experiences of their roles in society and examine how the transmission of internalized religious knowledge permeates and dictates their everyday life choices. I analyze the ways in which women reflect on their experiences and negotiate Islamist ideology while reshaping their own pious subjectivities. Women participating in Lebanese Sunni movements are involved in these organizations not only for the sake of advancing the movement’s goals, but also have a personal desire to satisfy their cultivation as ideal religious women. In the process of doing so, contradictions between disseminated ideology on women’s actions and actual everyday practices within Islamist frameworks emerge. In this paper, I argue that these women negotiate this conundrum by deploying a creative, pragmatic interpretation of religious principles.

(Liza) Eliza May Tait-Bailey

(How) Do You Ask? Examining the Effect of Pornography Upon Attitudes Towards Sexual Consent in Undergraduate Students

The prevalence of sexual assault on college campuses in the United States is a matter of national concern, and prevention efforts often focus on consent as a mechanism to reducing sexual assault. Meanwhile, a sizeable body of literature exists linking pornography - consumption of which is considerable among those of college-age - to sexual assault attitudes. This - combined with a lack of high school sexual education for which internet pornography can often be a substitute - makes understanding the effect of pornography upon young adults a matter of increasing importance. As such, this study aims to build on existing research by instead focusing on consent; a multifaceted concept that is often a source of contention. Using survey responses from U.S. based undergraduate college students (n=600), this study investigates the effect of pornography upon different aspects of attitudes towards sexual consent. Regression analysis shows no significant correlation, although individual characteristics were in some cases found to be significant. The possible reasons for this result and implications of the research are explored.

Brittany Alayne Valma Trilford

Reclaiming the Side-Alleys of Abu Dhabi

Seeking to discover the hidden side of Abu Dhabi, my Capstone investigates this Gulf city's 'forgotten' urban spaces; in between the super-block urban fabric lie neglected side-alleys and modern sikkak. I use a theoretical framework that responds to a shift in urban research, emphasizing the everyday as well as transnational connections in which the local and the global are closely intertwined. I position the popular urban interstice in the context of Islamic urban tradition as I argue the conceptualisation of side-alleys as modern sikkak and propose valuing their historic and sustainable qualities. Using a mixed methodology that combines both GIS-based mapping and video recording, the side-alleys of Abu Dhabi were observed and analysed to show the resilience of city dwellers in circumventing official space narratives and how pedestrians lay claim to the city. Through the site-specific analysis of user's behaviour, their activities as well as the architectural morphology of these spaces, I situate them within the overall development of Abu Dhabi's past, present and future.

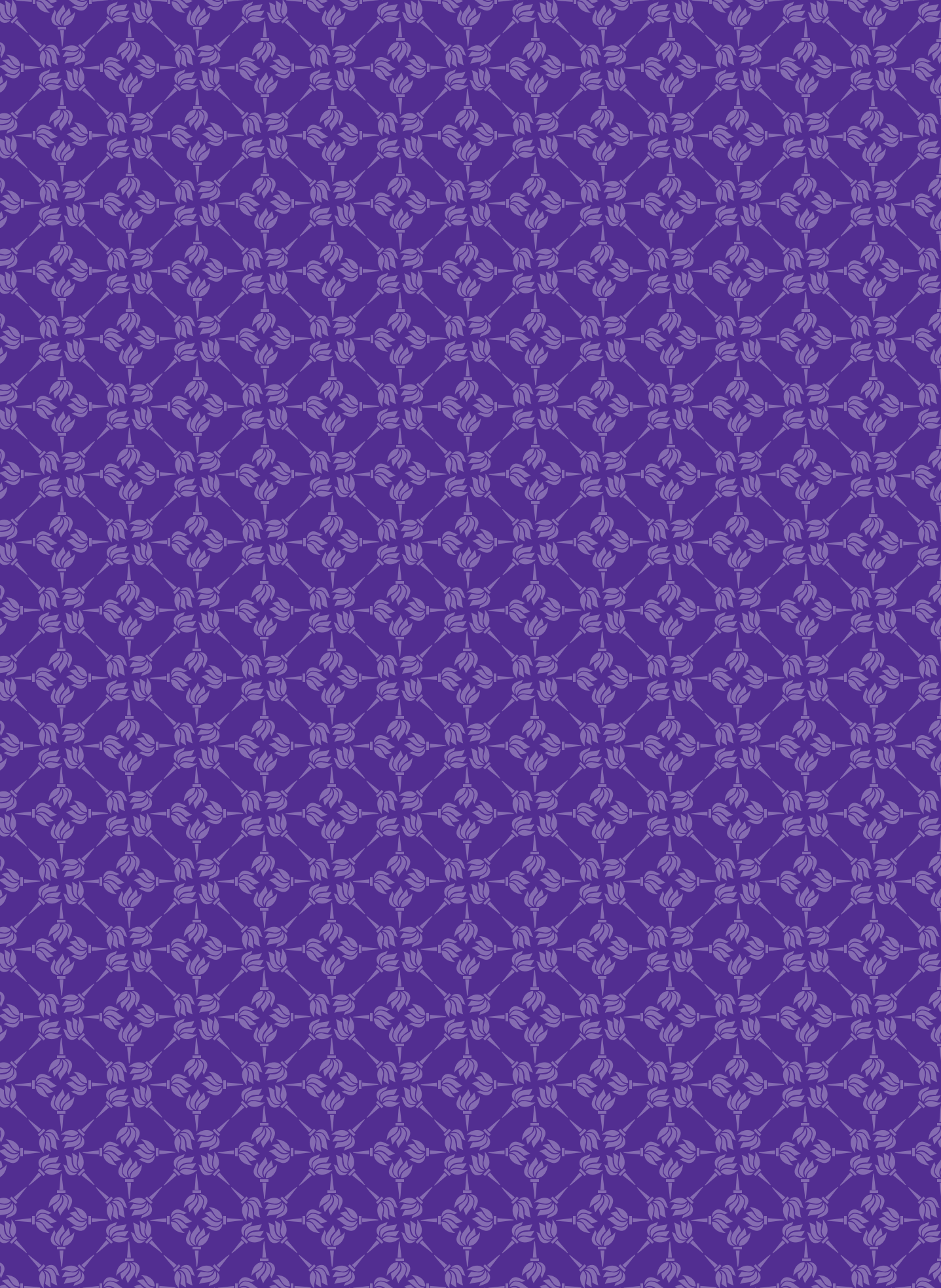
Muhammad Usman

Framing Jihad:

How an Islamist Organization Speaks Across Languages

How does an Islamist organization present its main ideological message to different audiences? This study uses frame analysis, a methodology first developed by Erving Goffman, to analyze the Urdu and English language propaganda published by Jamiat-i-Islami Afghanistan (JIA) during the Soviet-Afghan War. By tracing variations in collective identity, collective action and adversarial framing across languages, we are able to understand how injustice frames evolve based on the language of the audience. Analyses show that JIA's Urdu language propaganda framed the war and the suffering of the Afghans as a religious struggle — one that required a religious solution. The English language propaganda, however, was attuned to the political nature of the war, calling upon major stakeholders such as the UN, United States and Pakistan to support a religious struggle to limit the humanitarian and political cost of the war. This study shows that Islamists are able to strategize their message to different audiences without compromising on their ideology. Future research aimed at understanding Islamist ideology should take the dynamics of framing and audience into account.





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