

HIJACKING HIGHER EDUCATION QATAR, THE MUSLIM BROTHERHOOD AND TEXAS A&M

BUYING NUCLEAR RESEARCH AND STUDENT INFORMATION

Volume Two

2024

ISGAP

THE INSTITUTE FOR THE STUDY OF
GLOBAL ANTISEMITISM & POLICY

ISGAP is dedicated to scholarly research into the origins, processes, and manifestations of global antisemitism and other forms of prejudice, including various forms of racism, as they relate to policy in an age of globalization. On the basis of this examination of antisemitism and policy, ISGAP disseminates analytical and scholarly materials to help combat hatred and promote understanding.

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Executive Summary

The Institute for the Study of Global Antisemitism and Policy (ISGAP) report published in November 2023 entitled “**Hijacking Higher Education, Qatar, The Muslim Brotherhood, and Texas A&M,**” uncovered that more than a billion US dollars had been provided to Texas A&M (TAMU)/ Texas A&M in Qatar (TAMUQ) by the Qatar Foundation, a Qatari regime-owned foundation, as part of a contractual agreement to pay for research projects. The 2023 ISGAP Report highlights several concerns pertaining to sensitive research projects, some of which could have the potential for dual use, and potential contribution to the development (indirect or direct) of military applications. In addition, the Qatar Foundation (QF) TAMU contract extraordinarily stipulates that Qatari state proxies own the intellectual property for the research projects, which is not conventional practice. In addition, according to the agreement, the Qatari Regime, based on the contract with Texas A&M, has access to sensitive student information, which could violate acceptable United States (US) practices.¹

Since the release of the November 2023 ISGAP report “[Hijacking Higher Education, Qatar, The Muslim Brotherhood, and Texas A&M,](#)” TAMU issued a statement entitled, “Correcting Misinformation About Our University.” TAMU asserted:

Texas A&M is one of six American universities in Doha’s Education City supporting the education pillar of the U.S.-Qatar bilateral relationship. Scores of U.S. businesses operate in Qatar, which has strong ties to Texas-based energy companies. And, of course, Qatar is home to our country’s largest military base in the Middle East” and “despite what recent online reports have stated, Texas A&M at Qatar does not offer a nuclear engineering program or any classes on the subject.²

Notably, two significant concerns examined and presented publicly in the ISGAP 2023 report were not addressed in the TAMU statement. First, issues pertaining to Qatari state-owned proxies owning the intellectual property of research; and secondly, the contract enabling the Qatari authorities to have access to sensitive student personal information.

Based on TAMU’s response to ISGAP’s 2023 report on Texas A&M, ISGAP carried out further analysis, which is presented in this report (Volume Two). This analysis focused on the scope and nature of the research projects listed in its report, which were part of the research that TAMUQ and Qatar agreed to, and to determine whether there are real concerns pertaining to the projects themselves, and to some TAMUQ academic staff and scholars’, with their professional credentials and experience in nuclear-related research.

This, Volume Two of the ISGAP report, highlights 58 research initiatives, which, based on our analysis, appear to be sensitive in terms of national security concerns due to its potential dual use civilian and military applications. Significantly, 10 out of the 58 projects have been conducted by one professor, Dr. Othmane Bouhali. Indeed, this report demonstrates **a connection between TAMUQ faculty members and nuclear-related**

¹ It should be noted that Freedom of Information Act (FOIA) requests and legal actions have been made over the years by law firms and NGOs, such as Legal Watch and Zachor Foundation, and TAMU have not been forthcoming.

² General (Ret.) Mark A. Welsh III, “Correcting Misinformation About Our University,” *Texas A&M University*, January 7, 2024, <https://president.tamu.edu/messages/correcting-misinformation-about-our-university.html>.

research and engineering, which TAMU has publicly denied. In fact, beyond simply housing professors and projects conducting nuclear-related research, TAMUQ is the top university in Qatar for Nuclear Engineering and ranks second for Nuclear Physics. This is in contradiction to TAMU statements on this matter.

Qatar's Interest in Nuclear Power

In 2008, a paper published in the *Bulletin of the Atomic Scientists*, entitled “Agreeing to Disagree on Nuclear Rights,” documented that Bahrain, Jordan, Kuwait, Oman, **Qatar**, Saudi Arabia, the United Arab Emirates and Yemen announced their intention to develop nuclear power plants and, in some instances, enrichment or reprocessing facilities.³ This paper is significant as it is published in a respected journal which is concerned with science and global security issues resulting from accelerating technological advances. Subsequently, experts have been expecting Qatar to take steps to develop its nuclear-related research and activities.

One wonders if the leadership of TAMU and TAMUQ were aware of these known international matters and took the necessary steps to confer with Texas and Federal government authorities.

Furthermore, a presentation by Dr Ilham Al-Qaradawi,⁴ professor of physics at Qatar University and director of the Qatar Nuclear Research Centre, clearly stated Qatar's intent to develop its nuclear capabilities.⁵

The figure below is two slides from her presentation, “Setting Up Nuclear Programmes in the Arabic Peninsula” delivered in Ottawa, Canada in 2008.

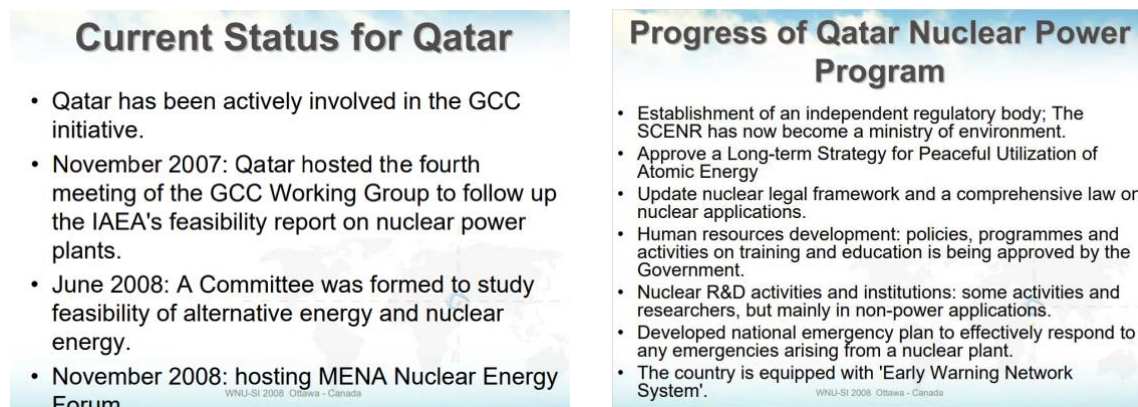


Figure 1: Examples of Qatar's stated nuclear intent since 2006.⁶

³ Rose Gottemoeller and Raymond Arnaudo, “Agreeing to Disagree on Nuclear Rights,” *Bulletin of the Atomic Scientists* 64, no. 5 (2008):2–44, <https://journals.sagepub.com/doi/epub/10.2968/064005006>.

⁴ Dr. Qaradawi is the daughter of the (late) Yusuf Al-Qaradawi, who served as the chief ideologue of the Muslim Brotherhood (MB) and had a prominent role as the intellectual and spiritual leadership of the jihadist, anti-American organisation. Yusuf Al-Qaradawi was a cleric, who like the MB, was fundamentally anti-American and antisemitic, and preached that true believers are obligated to complete the work of Adolf Hitler. See ISGAP report, “**The Qatari Regime, Hamas and Muslim Brotherhood**” for an overview of his ideology and political mandates.

⁵ Ilham Al-Qaradawi, “Setting Up Nuclear Programmes in the Arabic Peninsula,” *WNU-SI* (2008),

https://www.jaif.or.jp/ja/wnu_si_intro/document/08-08-11-al-qaradawi_illam.pdf

⁶ Ibid.

TAMUQ and Nuclear Engineering and Related Research

TAMU stated that “**Texas A&M in Qatar does not offer a nuclear engineering program or any classes on the subject.**”⁷ However, according to EduRank, an independent metric-based ranking of 14,131 universities from 183 countries, TAMUQ is the top university in Qatar for Nuclear Engineering and ranks second for Nuclear Physics.⁸ This appears to be at odds with TAMU’s recent statement that “*Texas A&M at Qatar does not offer a nuclear engineering program or any classes on the subject.*”⁹ ISGAP considers this contradiction, especially on this subject matter, concerning and worthy of a transparent overview.

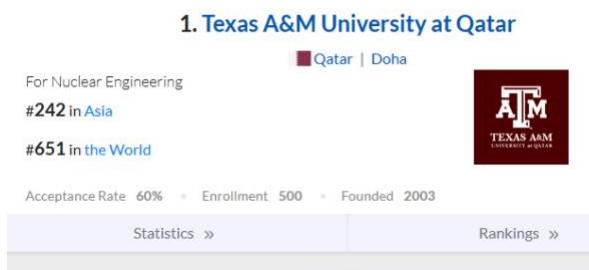


Figure 2: Nuclear Engineering.¹⁰

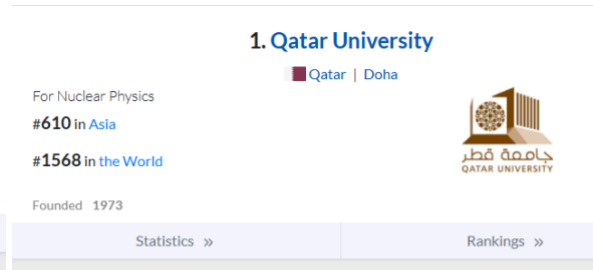
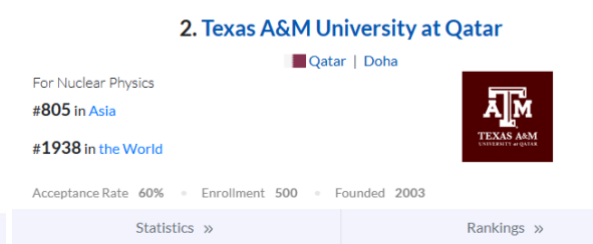


Figure 3: Nuclear Physics.¹¹



⁷ General (Ret.) Mark A. Welsh III, “Correcting Misinformation About Our University.”

⁸ “2 Best universities for Nuclear Engineering in Qatar,” *EduRank* (2023), <https://edurank.org/engineering/nuclear/qa/>.

⁹ General (Ret.) Mark A. Welsh III, “Correcting Misinformation About Our University.”

¹⁰ *Ibid.*

¹¹ *Ibid.*

Qatari Regime Funding of TAMUQ Research: Potential for Dual Use and May Contribute to the Development (Indirect or Direct) of Military Applications

After further research, this Report, Volume Two, demonstrates new discoveries by an independent senior military technology expert. The analysis has shown that 57 out of the 502 research projects highlighted by ISGAP's previous report, funded by Qatari entities owned by the state, raise concerns that they could have possible dual use and potentially contribute to the development (indirect or direct) of military applications. This is further exacerbated by the fact that these same Qatari state-owned entities own the intellectual property they generate.

The table below highlights the 57 TAMUQ projects in question.¹²

#	Project Number	Project Title	Dual Use Potential
1949	NPRP-BSRA01-0422-210050	The next phase of the High Energy Physics Program in Qatar: The High Luminosity LHC	Taking part in the <i>Conseil européen pour la Recherche nucléaire</i> (European Council for Nuclear Research) (CERN) program, is giving access to the most advanced acceleration technologies and knowledge. Generally, high energy physics could relate to nuclear research and high energy based weapons
3602	UREP19-136-1-023	Simulation of charged particle detectors for future upgrades of the CMS experiment at the Large Hadron Collider	Relates to project 1949 (LHC)
3497	UREP 16 – 132 – 1 – 020	Investigation of the performances of the Gas Electron Multiplier for collider experiments	Relates to project 1949 (LHC)
3989	UREP29-155-3-049	Performance study of different scintillation crystals for future Positron Emission Tomography imaging	Scintillation crystals could be used in neutron detectors that could be used to measure neutrons in nuclear weapons related experiments
1648	NPRP13S-0121-200126	Self-generated spatiotemporal nanostructuring of laser light applied to energy transport via econfigurable guiding networks in nanophotonics, solids, and soft matter	Laser could have potential uses in various military related systems (however, it is difficult to determine if this project is military oriented)

¹² <https://isgap.org/wp-content/uploads/2023/11/Texas-AM-University-GIFTS-NPRP-DK-FORMATTING.xlsx-Texas-AM.pdf>

1553	NPRP12S-0205-190047	Photonics with Structured Light for Applications in Communication and Nano-technologies	Unclear what type of photonics are intended to be used, might be relevant
3721	UREP23-048-2-023	Development of an Advanced Shock Tube Charging System for Studying Combustion Properties of Liquid GTL Fuels	Could use to develop explosive materials (GTL fuels are gas to liquid fuels)
3643	UREP20-123-2-032	Development of a Hybrid Heat Sink for Thermal Management of Hot-Spots – Concentrated Photovoltaic Applications	Hot spots could happen in nuclear reactors
3637	UREP20-101-2-029	Highly Efficient Inductive Power Transfer System for Electric Vehicles	Need to explore the power transfer systems in order to understand if it's relevant for military applications
3557	UREP18-124-2-051	Effect of moisture content and particle size on the explosive properties of sulfur dusts	Could use to develop explosive materials
3553	UREP18-099-2-040	Simulation of Emergency Relief from Vessels with Runaway Reactions	Could relate to nuclear fusion reactions
3515	UREP17-045-3-012	Monte Carlo Study of a Clinical PET using the GATE software	Monte Carlo simulation is a tool that can be used in calculating neutron flux in nuclear weapons
3410	UREP 14 – 060 – 2 – 019	Uniformity studies in Gas Electron Multiplier based detectors	A gas electron multiplier (GEM) is a type of gaseous ionization detector used in nuclear and particle physics and radiation detection.
3389	UREP 13 – 167 – 2 – 056	Experimental study of the thermal decomposition of tert-Butyl Peroxy-2-Ethylexanoate under runaway conditions using isothermal and adiabatic calorimetry	Could relate to nuclear fusion reactions
2062	PDRA2-1110-14066	High-Performance Drive with Permanent Magnet Synchronous	Permanent magnet drives/motors could be used for Uranium enrichment centrifuges

		Motor Based on Model Predictive Control	
1818	NPRP8-352-1-074	Ultra-high precision lithography, microscopy, and imaging	Very general, however these precision methods could be used for several military applications (for example production of accurate components for Uranium enrichments centrifuges)
1305	NPRP 7 – 953 – 2 – 357	Structure-Aware Reliability Analysis of State Estimators in Large-Scale Sensor Systems	Accurate sensors could be used for various applications, including military ones
1290	NPRP 7 – 756 – 2 – 284	Novel aluminum alloys for very high temperature applications	These alloys can be used as building materials for various applications including military ones (missiles for example)
1283	NPRP 7 – 674 – 2 – 252	Advanced emergency preparedness and response tools for airborne hazardous materials in urban environments	Could be relevant depending on the materials handled. When you study defence against hazardous materials, you can learn about attacking with these materials
1197	NPRP 7 – 1470 – 2 – 528	Multiscale modelling and characterization of advanced interface materials for high energy and corrosive environments	Could be potential for using in missile and nuclear industries which are high energy and corrosive environment protections
1193	NPRP 7 – 1449 – 2 – 523	In-depth Characterization of Spray and Combustion Performance of Alternative Jet Fuels at Gas Turbine Combustor Conditions	Could be used for missile development (mainly engine)
1142	NPRP 6 – 863 – 2 – 355	Multiscale modelling of metal dusting corrosion in Iron: From Quantum Chemistry to Kinetic Monte Carlo Simulation	Monte Carlo simulation is a tool that can be used in calculating neutron flux in nuclear weapons
1138	NPRP 6 – 784 – 2 – 329	Communication for Control of Distributed Systems	Distributed systems could be used for complex industrial plants such as nuclear reactors
1014	NPRP 6 – 021 – 1 – 005	Self-organized solitonic structures propagating in semiconductor quantum wells,	Could relate to high energy physics which could relate to explosions (conventional/nuclear)

		nanocomposites, polymers, photonic crystals, metamaterials and nanoplasmonics for application	
965	NPRP 5 – 502 – 2 – 200	Development of New Multifunctional Coatings for Protection against Erosion and Corrosion in Qatar Oil and Gas Production	Strategic materials that could also be used for military uses such as missiles
958	NPRP 5 – 464 – 1 – 080	Creation of an Experimental High Energy Physics Program in Qatar for Future Colliders	High energy physics is relevant for nuclear weapons and explosives – need to further investigate
938	NPRP 5 – 344 – 2 – 129	Fluid Separations by Adsorption in Porous Solids	Could possibly be relevant for liquid-liquid separation of materials such as U/Pu
876	NPRP 5 – 102 – 1 – 026	Precision measurements with applications in optomechanical systems, lithography, and nonreciprocity	Could be relevant for devices for military use
763	NPRP 4 – 1411 – 2 – 555	Toward Low Temperature Formability of Damage-Tolerant High Specific Strength Magnesium Alloys: Experiments and Modeling	Strong magnesium alloys could be used for a variety of purposes also for military applications (weapons, armor, components in nuclear reactors)
751	NPRP 4 – 1249 – 2 – 492	Risk Analysis and Efficient Logistics for Maritime Ports and Waterways	Could affiliate with naval military forces force build-up
701	NPRP 09 – 928 – 2 – 354	Development and characterization of high strength steel for down-hole application in sour environment with superior corrosion and wear resistance	High strength steel can be used for different military applications such as armor and weapons

665	NPRP 09 – 585 – 1 – 087	Precision spectroscopy for trace detection and analysis of hydrocarbon well gases	Precision spectroscopy is a technology that can be used to analyse a variety of materials, thus has potential to be used for various malicious purposes (for example analyse radioactive materials)
654	NPRP 09 – 462 – 1 – 074	Light bullets, fractional vortices, and nonlocal solitons for all-optical information transmission in photonic crystals, dispersion-managed systems, and distributed fibers	Need to further investigate the possible military applications of these technologies
605	NPRP 09 – 1153 – 2 – 450	Model-free, Data-based Design of Adaptive Control Systems: A New Approach	Could be part of control infrastructure of complex industrial plants
540	NPRP 08 – 431 – 1 – 076	Theoretical Investigation of Metal Oxides and Metal Oxide Interfaces	Depending on the type of metals (could be U/Pu)
528	NPRP 08 – 369 – 2 – 140	Condition Monitoring and Fault Diagnosis of Electric Machines	Very general and could be relevant for electric machines in military industry
492	NPRP 08 – 043 – 1 – 011	Applications of quantum interferometry and coherence to precision sensing, microscopy and lithography	Sensing, microscopy and lithography could be relevant for accurate measurements in military field
511	NPRP 08 – 172 – 2 – 049	Advanced Reduction Processes for Hazardous Wastes Treatment	Depending on the types of hazardous wastes they want to treat
3786	UREP24-170-3-050	Assessing Radiation Therapy treatment of lung cancer using GATE Monte Carlo simulation software	Monte Carlo simulation is a tool that can be used in calculating neutron flux in nuclear weapons
73	CWSP16-W-0228-19039	Safe and Reliable Electrical Distribution Systems	Could be part of electrical infrastructure of complex industrial plants
3164	UREP 09 – 021 – 2 – 005	Artificial Intelligence Based Fault Diagnostics of Induction Machines	AI is a strategic capability – this research is very general

		for Industrial Applications	
131	CWSP2-C-0409-14038	26 th IEEE International Conference on Microelectronics (ICM 2014)	Very general, could contain relevant research
151	CWSP5-C-1209-14005	Photonics Middle East Conference 2015	Very general – could be relevant, depending on the topics presented in the conference
2935	UREP 04 – 004 – 4 – 008	Design and construction of an automated air jet calibration facility	Need to further investigate if this type of plant can be used for military purposes (or the machinery and processes it includes)
2889	UREP 03 – 003 – 5 – 033	Study of Potential for Radiocarbon Dating of Qatar Petroglyphs	Depending on the infrastructure used for radiocarbon dating, this could be relevant (for example using an accelerator mass spectrophotometer that could be used to measure radioactive materials)
2885	UREP 03 – 003 – 4 – 193	Development of a Web Based Power Quality Monitoring and Analysis System	Could be part of electrical infrastructure of complex industrial plants
2796	UREP 01 – 001 – 4 – 356	Utilization of Byproduct Sulfur for Treatment of Hazardous Wastes (Phase 1)	Depending on the types of hazardous wastes they want to treat
1934	NPRP9-383-1-083	Engineered light for biomedical and energy harvesting applications	Depending on the types of energies they want to harvest, could be nuclear energy?
1923	NPRP9-328-1-066	The Experimental High Energy Physics Program in Qatar	High energy physics could relate to nuclear weapons and highly energetic conventional weapons
1909	NPRP9-246-1-054	Responsively Soluble Polymers for Purification of Organic and Aqueous Solutions	Could assist in separation processes (such as U-Pu separation), needs further exploration
1898	NPRP9-204-2-103	A Fault-Tolerant Capacitor-less Power Quality Compensator for Electrical Distribution Systems	Could be part of electrical infrastructure of complex industrial plants
1871	NPRP9-069-1-018	Protecting Building Automation Networks From Insider Attacks	Protecting from attacks can teach a lot about how to attack

1504	NPRP11S-1129-170045	Robust Field Capable Assessment of Surface Modified Nickel Superalloys	Strategic material that can be integrated in military related products (such as missiles)
1365	NPRP07-8-6-7-1	THE INFLUENCE OF ELECTRONIC AND STERIC EFFECTS ON THE REACTIVITY OF THE METAL-(π -AROMATIC) BOND: A LASER FLASH PHOTOLYSIS STUDY WITH INFRARED DETEC [sic]	Laser flash photolysis could be used to photograph extremely fast phenomena like explosions
3484	UREP 16 – 063 – 2 – 010	Development and testing a thermal imaging software for heat transfer measurements	Depends on what is being measured – heat transfer imaging could be relevant for nuclear reactors/weapons/nuclear weapons simulations
2086	PDRA7-0307-21001	Three-Dimensional Printing of Structures Using Sustainable Materials	Depends on what is being printed – it is possible to 3D print components of weapons
442	JSREP 06 – 008 – 2 – 002	Multivariate Statistical Process Monitoring and Applications	Depends on what industrial processes are being monitored

Figure 4: The 57 TAMUQ research projects that raise concerns and could have the potential for dual use.

In addition to the research projects listed above from the 502 that were listed in [our original report](#), we have found other projects undertaken by TAMUQ which **could** also have the potential for dual use purposes. For example, according to TAMUQ’s Research Yearbook, **Dr. Mohamed Aggour**, a professor of petroleum engineering who conducts research supported by the Qatar National Research Fund (QNRF) – which is a member of the Qatar Foundation (QF) – is:¹³

engaged in collaborative research, on behalf of Texas A&M at Qatar, with industry in support of Qatar and QNV 2030, leading a research project sponsored by Ras Gas on an efficient way to detect the onset/presence of formation water in gas flowlines. “The petroleum industry needs a device that is nonintrusive, and provides online real-time accurate measurements, and that device does not yet exist,” Aggour said. “We propose a concept using our experience in nuclear engineering.”

Texas A&M at Qatar is creating a device that can be physically placed on the flowline that generates neutrons and measures the particles’ interactions with

¹³ “Annual Research Yearbook 2013,” *Texas A&M University at Qatar* (2013), <https://www.qatar.tamu.edu/assets/img/images/documents/Annual-Research-Yearbook-2013.pdf>.

material inside the pipe to indicate the presence of water. Aggour believes the device will provide data and information, which are very useful for field operations.

Based on expert analysis, it is our understanding that the Neutron generator possesses also the potential to be used as a neutron source in a nuclear device. **However, the TAMU statement asserted that work was not being carried out in certain sensitive areas at TAMUQ.**

Scholars at TAMU/TAMUQ with Nuclear/Defense Interests

1. Professor Ilham Al-Qaradawi¹⁴

Ilham Al-Qaradawi, another professor conducting work in areas that TAMU argued did not exist, is the daughter of the (late) Yusuf Al-Qaradawi, who was an Egyptian Islamic scholar based in Doha, Qatar and chairman of the International Union of Muslim Scholars.¹⁵ Yusuf Al-Qaradawi served as the unofficial chief ideologue of the Muslim Brotherhood. Yusuf Al-Qaradawi was a supporter of combative Jihad against the United States, the West and Jewish people, and was barred from entry into many Western countries. For a selection of his religious views and fatwas, see ISGAP report “[The Qatari Regime, Hamas and the Muslim Brotherhood.](#)”

Ilham Al-Qaradawi is professor of physics at Qatar University and adjunct professor of physics at Texas A&M University in Qatar.¹⁶ Over the past decade, she has established a positron laboratory at Qatar University, and successfully built the first slow positron beam in the Middle East. She has also established an environmental radiation measurement laboratory. Al-Qaradawi is involved with the European Council for Nuclear Research (CERN) in the Antihydrogen experiment AEGIS.¹⁷

Furthermore, in Qatar, she has taken part in several nuclear related committees and organizations, such as the Qatar National Committee on Peaceful Nuclear Applications, and she was previously a member of Qatar’s National Radiation Protection Committee.¹⁸ Al-Qaradawi has participated in multiple research projects that were funded by the QNRF, which is a major donor to TAMUQ.¹⁹

Ilham Al-Qaradawi is also Qatar’s counterpart for an International Atomic Energy Agency (IAEA) Regional Technical Cooperation Project on nuclear training and has organized international conferences in her field.²⁰

According to Ilham Al-Qaradawi’s CV, some of her areas of work include:²¹

- Nuclear and radiation studies and applications, such as measuring radon gas concentration in Qatar.
- Lead Principal Investigator of research grant in collaboration with GSI Helmholtz Centre for Heavy Ion Research Germany on nuclear/radiation topics.
- Member of the CMS Experiment collaboration at the Large Hadron Collider (LHC) at CERN studying high energy nuclear physics.

¹⁴ Al-Qaradawi, “Setting Up Nuclear Programmes in the Arabic Peninsula,” *WNU-SI* (2008), https://www.jaif.or.jp/ja/wnu_si_intro/document/08-08-11-al-qaradawi_illam.pdf.

¹⁵ “Qatar-based cleric calls for Egypt vote boycott,” *AFP* (2014), <https://web.archive.org/web/20140616031315/https://uk.news.yahoo.com/qatar-based-cleric-calls-egypt-vote-boycott-192234858.html>.

¹⁶ Ilham Al-Qaradawi, “Profile,” <https://ilhamalqaradawi.com/profile/#:~:text=She%20received%20her%20Ph.,beam%20in%20the%20Middle%20East>.

¹⁷ Ibid.

¹⁸ “Prof. Ilham Y.Al-Qaradawi Curriculum Vitae,” https://www.qu.edu.qa/static_file/qu/colleges/cas/faculty%20and%20staff/Math-Stat-Physics/documents/ilham_CV_Formal_-_2013.pdf.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid; “Ilham Al-Qaradawi,” *LinkedIn*, <https://www.linkedin.com/in/ilhamalqaradawi/?originalSubdomain=qa>.

- Member of the AEGIS antimatter gravity experiment at CERN.
- Member of the ISOLDE isotope beam facility at CERN.
- Participated in IAEA Regional Technical Cooperation Project on developing a regional nuclear training center.
- Lecturer at the World Nuclear University Summer Institute and World Nuclear University School on Radioisotopes.

Ilham Al-Qaradawi has been involved in setting up nuclear programs in the Arabic Peninsula.²² Throughout the years, she has cooperated with several nuclear related entities, such as the World Council on Isotopes, and took part in several nuclear related projects such as the Radiation Measurements Cross Calibration Project.²³

These projects are peaceful-civilian, however, by leading and participating in them, Ilham Al-Qaradawi could have gained knowledge and experience that could assist in developing capabilities relating to nuclear weapons.

For example:

- a) Theoretical knowledge in physics gained by thoroughly studying subatomic particles (such as positrons) and different types of radiation (such as gamma radiation).
- b) Practical experience in developing and using several types of detectors that are used in the nuclear industry.
- c) Extensive knowledge regarding IAEA inspection methods and protocols and possibly gain information on nuclear programs that are inspected by the IAEA worldwide.
- d) In general, Al-Qaradawi probably had contact with multiple scientists and experts from several nuclear related domains, from which she could have learned about technologies that could have military applications.

View Ilham Al-Qaradawi's full CV [here](#).

2. Dr. Othmane Bouhali

Dr. Othmane Bouhali is another example of a professor carrying out research in an area TAMU stated does not exist. According to the TAMUQ website,²⁴

Dr. Bouhali received his PhD in Science from the Universite Libre de Bruxelles in 1999. Since 1994, he has participated to the Compact Muon Solenoid (CMS) experiment program at the Large Hadron Collider Project (LHC) at CERN. He was also a member of the fixed target experiment HERMES at the Deutsches Electronen Synchrotron (DESY) and a member of the AMANDA/ICECUBE neutrino telescopes at the South Pole.

His field of expertise includes charged particle detectors, high energy and medical physics and high-performance computing. He is the director of research computing and a research professor at Texas A&M University at Qatar.²⁵

²² Ilham Al-Qaradawi, "Setting Up Nuclear Programmes in the Arabic Peninsula."

²³ "Prof. Ilham Y. Al-Qaradawi Curriculum Vitae."

²⁴ "Dr. Othmane Bouhali," Texas A&M University at Qatar, <https://people.qatar.tamu.edu/othmane.bouhali/>.

²⁵ Ibid.

According to the TAMUQ website, “he is the founder of the TAMU-Q Advanced Scientific Computing (TASC) center. He is affiliated with the Qatar Computing Research Institute (QCRI) in the computational Science and Engineering group. He is also chairing the [High Performance Computing] HPC committee at Education City. He is leading the High Energy Physics group in Qatar. The group is participating to the CMS experiment. He has served on many national and international committees, chaired conferences and workshops.”²⁶

Bouhali has published hundreds of papers over the last few years, some as the lead researcher and some in cooperation with other researchers of various nationalities.²⁷

Dual-Use Potential in Bouhali’s Work:

Bouhali, who has vast experience in high energy physics, is taking part in global and prestigious scientific projects, such as at CERN.²⁸ During his lengthy period in those projects, it is assumed that Bouhali, who has engaged with experts from all over the world, has gained significant insights and experience, which assist him and his students in acquiring strategic nuclear physics related knowledge.

The main capabilities and knowledge bases in his work that could be used for nuclear weapons are the following:

- a. Generally, high energy physics is the study of fundamental particles and forces that constitute matter and radiation. The field also studies combinations of elementary particles up to the scale of protons and neutrons. Such theoretical knowledge in fundamental principles of physics could also assist in understanding nuclear weapons related physics.²⁹
- b. Scintillation crystals – Neutrons and their detectors play a significant role in areas such as nuclear power generation, nuclear decommissioning and decontamination and nuclear proliferation.³⁰ Owing to the complexity of their detection, new sensitive materials are sought. Organic and inorganic scintillating crystals have been recognised as particularly good alternatives.
- c. Particle/radiation detector and gas electron multiplier (GEM) – such detectors could be used to detect particles, such as neutrons, in the R & D process of a nuclear device. GEMs can also be used to detect Uranium or Plutonium.³¹
- d. Monte Carlo simulations – the forefront class of computer-based numerical methods for carrying out precise, quantitative risk analyses of complex projects.³² The methodology was invented in the 1940’s by physicists working

²⁶ Ibid.

²⁷ “Othmane Bouhali,” *Google Scholar*, https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=_dtwhFwAAAAJ&pagesize=80&sortby=pubdate.

²⁸ “CERN Workshop,” *Texas A&M at Qatar*, <https://qfwebsiteold.azureedge.net/%24web/app/media/CERNWorkshopEnglish.pdf>.

²⁹ “Othmane Bouhali,” *Google Scholar*.

³⁰ Ibid.

³¹ Ibid.

³² Ibid.

on the Manhattan Project for the development of the atomic bomb, and since then it has found widespread application in many different fields. This simulative method could be used to perform simulations for developing nuclear weapons.³³

- e. High Performance and Distributed Computing is one of Bouhali’s expertise.³⁴ Advanced and distributed computing infrastructure is necessary to perform complex simulations for developing nuclear weapons.

According to an analysis of the recipients of the 57 grants which ISGAP has identified as raising concerns—possibly having the potential for dual use—and may contribute to the development (indirect or direct) of military applications, **Bouhali is responsible for ten of the grants.**

Project Number	Project Title	Potential Dual Use
NPRP-BSRA01-0422-210050	The next phase of the High Energy Physics Program in Qatar: The High Luminosity LHC	Taking part in the CERN program provides an access to the most advanced acceleration technologies and knowledge. Generally, high energy physics could relate to nuclear research and high energy-based weapons
UREP19-136-1-023	Simulation of charged particle detectors for future upgrades of the CMS experiment at the Large Hadron Collider	Relates to project 1949 (LHC)
UREP 16 – 132 – 1 – 020	Investigation of the performances of the Gas Electron Multiplier for collider experiments	Relates to project 1949 (LHC)
UREP29-155-3-049	Performance study of different scintillation crystals for future Positron Emission Tomography imaging.	Scintillation crystals could be used in neutron detectors that could be used to measure neutrons in nuclear weapons related experiments
UREP17-045-3-012	Monte Carlo Study of a Clinical PET using the GATE software	Monte Carlo simulation is a tool that can be used in calculating neutron flux in nuclear weapons
UREP 14 – 060 – 2 – 019	Uniformity studies in Gas Electron Multiplier based detectors	A gas electron multiplier (GEM) is a type of gaseous ionization detector used in nuclear and particle physics and radiation detection
NPRP 6 – 863 – 2 – 355	Multiscale modeling of metal dusting corrosion in Iron: From Quantum Chemistry to Kinetic Monte Carlo Simulation	Monte Carlo simulation is a tool that can be used in calculating neutron flux in nuclear weapons

³³ “Monte Carlo Simulation,” NASA, <https://www.nasa.gov/monte-carlo-simulation/>.

³⁴ “Research Team from Texas A&M at Qatar to Continue Collaboration with CERN,” *Texas A&M University at Qatar*, July 15, 2022, <https://www.qatar.tamu.edu/news-and-events/news/2022/07/15/research-team-from-texas-a-and-m-at-qatar-to-continue-collaboration-with-cern/>.

NPRP 5 – 464 – 1 – 080	Creation of an Experimental High Energy Physics Program in Qatar for Future Colliders	High energy physics is relevant for nuclear weapons and explosives – need to further investigate
UREP24-170-3-050	Assessing Radiation Therapy treatment of lung cancer using GATE Monte Carlo simulation software	Monte Carlo simulation is a tool that can be used in calculating neutron flux in nuclear weapons
NPRP9-328-1-066	The Experimental High Energy Physics Program in Qatar	High energy physics could relate to nuclear weapons and highly energetic conventional weapons

Figure 5: List of Professor Bouhali’s projects in TAMUQ.³⁵

Furthermore, with regards to TAMUQ’s research at CERN, Bouhali is quoted as saying:

*CERN is the largest laboratory in the world. Texas A&M at Qatar is already collaborating with researchers from CERN and throughout the world in the Large Hadron Collider project. The aim of this workshop is to explore future collaboration and extend it to other partners such as HBKU, QEERI and Qatar University. It also explores opportunities for Qatar to join CERN as a collaborating member.*³⁶

3. Arshad Mohammed Ali

According to TAMUQ’s Facebook page, Arshad Mohamed Ali (Chemical Engineering) wrote a Master’s thesis which focused on studying the impact of hypothetical nuclear accidents on Qatar from regional plants.³⁷ These results were then used to test radiation mitigation measures to protect Qatar’s population.

#	Project Number	Project Title
267	GSRA6-2-0612-19081	MSc-Design of a Receptor-Centric Decision Support System for Studying the impact of Hypothetical Nuclear Accident & its Mitigation

Figure 6: Arshad Mohammed Ali MSc thesis.

The research project was made possible by the above grant number GSRA6-2-0612-19081 made by the QNRF.³⁸

³⁵ <https://isgap.org/wp-content/uploads/2023/11/Texas-AM-University-GIFTS-NPRP-DK-FORMATTING.xlsx-Texas-AM.pdf>

³⁶ “CERN Workshop.”

³⁷ Texas A&M University at Qatar, Facebook, July 15, 2021, <https://www.facebook.com/TAMUQ/posts/10159453496219679/?paipv=0&eav=Afav27UjI7ES5EgLNuYH6v-TBAc68Alerd7GA747LkkhHneRadRSm1viXfYfwa47k8A>.

³⁸ “Projects,” QDRI Portal, <https://connect.qrdri.org.qa/projects?query=GSRA6-2-0612-19081%20&rnd=816&page=1>; “Grad Cable,” Graduate Student Association, December 20, 2020, <https://www.qatar.tamu.edu/assets/img/images/programs/ogs/Grad%20Cable%20-%20Vol%2003%20-%20Dec%202020.pdf>.

4. Dr. Eric L. Petersen, Professor and Nelson-Jackson Chair

Dr. Eric Petersen is currently the Nelson-Jackson Professor in the Department of Mechanical Engineering at Texas A&M University.³⁹

According to his CV, he has held the following posts at TAMU:⁴⁰

- Director, TEES Turbomachinery Laboratory (2018 – present).
- Professor, Mechanical Engineering (2012 – present).
- TAMU, Associate Professor, Mechanical Engineering (2008-2012).

Dr. Petersen was a staff scientist at The Aerospace Corporation in the Propulsion Science & Experimental Mechanics Department from 1997 to 2001.⁴¹ During his period at Aerospace, Dr. Petersen was also an instructor in the Mechanical and Aerospace Engineering department at the University of California, Irvine. Prior to his current position at TAMU, Dr. Petersen was an Associate Professor in the Mechanical, Materials and Aerospace Engineering department at the University of Central Florida (2001 – 07).⁴²

His research has been in the fields of gas dynamics; propulsion; combustion; shock wave physics and chemistry; chemical kinetics; optical diagnostics and spectroscopy; combustion instability; and rocket combustion. Over the years, Dr. Petersen has received significant research funding from various external sources, including government agencies and private companies, to support his work.⁴³

Recently, it has been revealed that since joining Texas A&M in 2008, Dr. Petersen **has received multiple research grants from the Qatar National Research Fund (QNRF)** - \$800,000, as well as the US Defense Advanced Research Projects Agency (DARPA) - \$1,950,000.⁴⁴ The QNRF funding relates to liquid fuel combustion research relevant to engines and gas turbines. The DARPA funding supported work regarding ignition and interactions of solid propellants.

Given the technically sensitive nature of some of this research related to aerospace technologies and propellants, alongside the involvement of a foreign governmental agency based in Qatar, this funding arrangement appears to warrant further investigation and analysis.

5. Internships and Conferences at CERN

- a. The European Council for Nuclear Research (CERN) is an intergovernmental organization that operates the largest particle physics laboratory in the world.⁴⁵

³⁹ “Eric Petersen,” *Texas A&M University Engineering*, <https://engineering.tamu.edu/mechanical/profiles/petersen-eric.html>.

⁴⁰ “Dr. Eric L. Petersen, Professor and Nelson-Jackson Chair Curriculum Vitae,” <https://petersengroup.tamu.edu/wp-content/uploads/sites/153/2019/11/Petersen-CV.pdf>; “Eric Petersen,” LinkedIn, <https://www.linkedin.com/in/eric-petersen-55b83010/>.

⁴¹ “Eric Peterson,” *GPPS*, <https://gpps.global/forum23-eric-petersen/>.

⁴² “Dr. Eric L. Petersen, Professor and Nelson-Jackson Chair Curriculum Vitae.”

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ “About CERN,” *CERN*, <https://home.cern/about>.

TAMUQ has provided internships at CERN.⁴⁶ Indeed, according to TAMUQ's website, Fahad Al-Thani was awarded such a position in 2016, which was actually funded by the QRNF.⁴⁷

- b. TAMUQ hosted representatives from CERN and visiting physicists to a workshop at Hamad bin Khalifa University (HBKU) Student Center on October 21, 2013.⁴⁸ The event was also attended by representatives of HBKU, Qatar Foundation Research & Development (QF), QNRF, Qatar University, TAMU and TAMUQ.

⁴⁶ Prestigious CERN Internship Awarded to Texas A&M At Qatar Student," *Texas A&M University at Qatar*, May 19, 2016, <https://www.qatar.tamu.edu/news-and-events/news/Prestigious-CERN-internship-awarded-to-Texas-A-M-at-Qatar-student>

⁴⁷ Qatar Foundation, *Twitter*, <https://twitter.com/QF/status/789436073474715648?s=20>.

⁴⁸ "University Hosts Influential High Energy Physics Workshop," *Texas A&M University at Qatar*, October 24, 2013, <https://www.qatar.tamu.edu/news-and-events/news/-en-University-hosts-influential-high-energy-physics-workshop->

Conclusion

Based on this Report's analysis of funding, Qatar has stated their nuclear-related ambitions for nearly two decades. Notably, however, Qatar has qualified that these are primarily non-weapons-related.

TAMUQ agreements with Qatar are not transparent, and research that has been raised in this report has been denied and labelled by TAMU as part of a misinformation campaign.

TAMU and TAMUQ are being funded by the Qatari Regime to carry out various types of research programs, some in highly sensitive areas, whereby Qatari state-controlled entities hold intellectual property rights.

According to EduRank, an independent metric-based ranking of 14,131 universities from 183 countries across 246 topics, TAMUQ is in the top two universities in Qatar for Nuclear Physics and Nuclear Engineering and has world class scholars that are pioneers in the fields of nuclear research as well as defense.⁴⁹ TAMUQ is collaborating, through Qatari donations, at CERN, and our analysis shows that approximately 10 percent of the research grants that we have found for TAMUQ from Qatari state-owned entities have the potential for dual use and contribution (indirect or direct) to military applications.

This contradicts TAMU's public statements.

In addition, the issue of Qatari state-owned institutions having access to student information and owning the intellectual property of the projects they have funded has not been addressed.

These are areas of concern, and the statements from Texas A&M do not address them. The implications for US national security and international stability and security are clear.

Therefore, ISGAP calls, once again, for the transparency of the contractual agreements between Texas A&M and Qatar, as well as the details of the research projects, to be made accessible to the relevant U.S. Federal and State government, in addition to all responsible agencies.

Additionally, ISGAP calls for an urgent investigation to be carried out to ascertain any potential national security implications with regards to nuclear research and potential dual use for weapons development and the access that Qatar has to private student information as well as control over the intellectual property of the research that they fund.

For too long, TAMU and TAMUQ have made concerted efforts to avoid and stymie efforts to ensure that there were public disclosures of agreements with the Qatari Regime and its proxies and of the subject matter and nature of the research projects. Given the findings of this Report, ISGAP calls on the Regents of the Texas A&M University System, as well as Texas State and Federal Government authorities, to hold a comprehensive and transparent investigation that will assess the issues raised in this report, and demand access to more information that continues to remain hidden for public oversight by TAMU.

⁴⁹ "14131 universities from 183 countries ranked across 246 topics," *EduRank*, <https://edurank.org/>.