



# IMPRINT

Public Relations & Information Department  
Sultan Qaboos University

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## Social Media A Vital Tool for Universities

Should You become Research  
Assistants?

Chromium Release from  
Rocks

The Story of a Lighting  
Revolution





جامعة السلطان قابوس  
Sultan Qaboos University

دائرة العلاقات العامة والإعلام  
PUBLIC RELATIONS & INFORMATION DEPARTMENT

## IMPRINT

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# A Breath of Fresh Air

We are delighted to introduce the first edition of our monthly newsletter **IMPRINT**.

It will be a regular publication to keep you in touch with news and developments related to Sultan Qaboos University. Horizon, the official newsletter of SQU, reigned as a popular communication tool that disseminated information about the University's activities to its community and the people outside. Horizon used to reach the readers on 10<sup>th</sup>, 20<sup>th</sup> and 30<sup>th</sup> of each month; a rare frequency indeed! A lot of people, including academics, researchers and students from inside the university and many others from outside SQU and abroad contributed to the newsletter. We take this opportunity to express our sincere gratitude to all those people who cooperated with Horizon newsletter during the last 14 years.

Publishing a newsletter gives us the opportunity to increase awareness and understanding of our institutions, its activities and services among its community and outside. Students, staff and the public may have a limited perspective of what the University offers in terms of teaching, research and community service if they only view our advertisements or receive official emails. Newsletter content builds a broader picture. Now we are coming up with a monthly newsletter in magazine format. We hope to communicate with our readers from all parts of the world, through our printed and online versions. Through this new format, we hope that our readership goes up and achieve a more in-depth connection with our communities. We want this newsletter to be valuable for you; so please share your feedback and suggestions to help us improve.

# Focus on Research Visibility

It is important for institutions such as SQU to consider the actions they could take to increase measures of research visibility such as institutional research ranking.

Sultan Qaboos University recently conducted a series of workshops exploring practical steps that staff and faculty can take to increase the institution's research visibility across a number of domains. The workshop series, facilitated by Dr. Sunayana Nandagopal and Dr. Christopher Denman from the DVC-PSR office, was attended by faculty, administrators, researchers, and staff from across SQU's colleges, deanships, and research centres. Although the specific focus of each of the four workshops varied each week, they all shared an overriding concern with the ways in which SQU faculty and staff could work together to increase the visibility of SQU's research output locally, regionally, and internationally. The series consisted of a number of hands-on sessions that aimed to be of immediate practical benefit to participants seeking to increase their research profiles in addition to SQU's profile as a research-intensive institution.

Dr. Rahma Al-Mahrooqi, Deputy Vice-Chancellor for Post-graduate Studies and Research, said that it was important for institutions such as SQU to consider the actions they could take to increase measures of research visibility, including institutional research ranking, the number of indexed publications, and so on. Dr. Rahma noted that institution-level support systems and policies are one of the main drivers of an institution's research visibility. At the same time, there are a number of important steps that individual researchers could take to increase the visibility of their work and of their institutions. "Increasing research visibility by engaging in the steps discussed in the workshops is not only important for the professional profiles of individual faculty, but also for SQU's standing as a leading institution of research and innovation within the Middle East region and worldwide", she said.







# Social Media A Vital Tool for Universities



**Sonia Ambrosio**

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There are several reasons to justify the need for a university to be wired, but the most common is to reach students, to build an active online community, to keep audiences informed and updated, and to monitor reputation.

Social media is no longer a novelty as it has been around us for at least one decade. It is an integrated part of people's lives, not just for socialization, but for information as well. All sorts of companies are benefiting from social media, and universities are the latest adherents.

Using one's imagination to tie the Internet use to a brand is an additional fragment of social media. Higher Education institutions recognize the value of online presence for attracting prospective students, hiring faculty, to keep up with alumni – including receiving funds for scientific research.

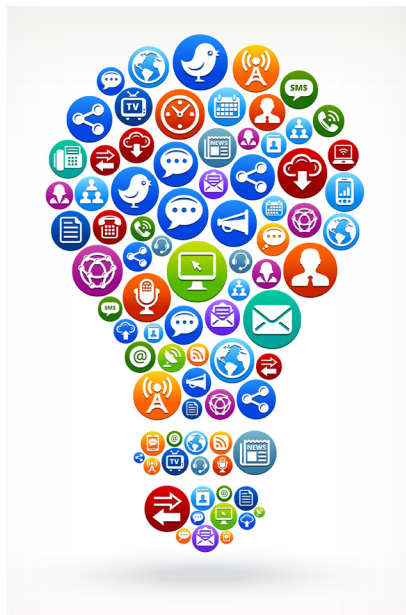
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Universities already have an audience active on the Internet. Prospective students, current and former students besides faculty members, assistants and administration staff – are into social media. Thus, a university has to be creative to get its audience helping to build the institution's online goals.

A university needs to consider the role of social media, but it also needs to understand which channels and exactly what objectives the university is looking to achieve – more importantly, the university has to consider how its social media engagement can be done creatively.

There are several reasons to justify the need for a university to be wired, but the most common is to reach students, to build an active online community, to keep audiences informed and updated, and to monitor reputation. Its online presence also works as a window to the world on the standard of education and teaching style.

A solid social media presence is vital these days, but most educational institutions have only one or two employees as part of its online team; therefore, there is a need to focus on selected few networks and not spreading it thin. For this, a university needs to find which social net-



works its audience spends most of the time, and set up a robust presence on those sites - always keeping in mind that social media users are quick to voice their appreciation or disdain for a product or service.

In this wired environment, one could ask whether the publication of press releases and newsletters are still worth. Well, press releases and hard copy newsletters are outdated, especially when an institution is able to have a better and more innovative approach to strengthen its brand online.

The 'traditional one-way communication channels', mainly newspaper, radio and television stations are having a face-lift towards social media - because the mass medium has always been based on attention. Social media – however - is based on user-generated content, socialization, immediate information, and self- broadcasting.

If considering whether a department or unit should be given the autonomy over its online presence, oh well, let's be realistic - there is so much going on within each college and departments that one single social media team wouldn't be able to cover all the events and activities happening on campus. Therefore, perhaps it is better to trust colleges and departments to manage their social media presence.

However, if a university is going to trust separate departments with their own accounts, it is essential to carry out some sort of discussion on best practices and expectations to maintain a cohesive voice. That is not all. It has to consider whether the college or the department has the staffing to support it. Social media presence is a lot of work! So, before departments are given the green light it should consider whether the unit has enough staff to carry out the social media presence and if it is necessary.

The concept of 'few words, more visuals' got its kick more recently when social media channels decided to show, not to tell. Since then, the visual has become a key part of a content strategy on social platforms. This trend toward visual is influenced by the shifting habits of technology users. It definitely increases engagement and has become an important element of communication online.

To have a strong and creative presence online an institution needs a clear understanding of its social media goals.





# Aspiring post-graduate students and novice researchers

## Should you become research assistants?

**Research is hardly easy, and solving research problems requires us to immerse ourselves in the unknown. Here, I would like to share my personal experience that equipped me with traits and skills to successfully solve research problems, communicate better, be more creative, and think critically.**

Last academic year, I was invited by Dr. Victoria Tuzlukova from the Centre for Preparatory Studies and Dr. Saleh Al Busaidi from the College of Education to join The Research Council funded project " Skills for the 21st cen-

ture training in higher education institutions in Oman: Helping students realize their highest potential in relation to the job market" in the position of the research assistant. This research aims to investigate how critical

thinking and problem-solving skills necessary for the 21st century are currently integrated in the curricula and taught in Oman's higher education institutions. I was assigned a number of tasks, however, my main role was data entry and analysis. In more detail, I was responsible for entering the data collected from different higher education institutions across Oman through questionnaires, and then analyzing it using SPSS. During the project period, I was also responsible for developing and managing effective project related communications in addition to preparing some project documents. Also, I worked with other research team members, and participated in the discussion of the issues related to the study. As well as that, I helped

the research team members with translating some project related documents and manuscripts from English into Arabic.

During the project time, I was encouraged to take some training courses and participate in workshops. To exemplify, I took a training session conducted by Dr. Christopher Denman in SPSS IBM statistics which was very useful and helpful in optimizing the analysis procedures, such as, for example, creation of different variables, generation of descriptive statistical data for question responses, including frequency counts of closed questions, distribution of multiple-choice question responses and exploring relationships between responses to different questions.

On 17 May 2017, I also attended a workshop titled "Critical thinking skills for the 21st century: how to define, assess, and teach critical thinking skills in your discipline". This workshop, organized by the SQU Centre for Excellence in Teaching and Learning, was conducted by Professor Nikos J. Mourtos, from San Jose State University. The workshop helped me to research the topic of critical thinking extensively and better understand teachers' challenges when teaching critical thinking. Moreover, it became clearer to me that some students face difficulties to express their knowledge in English and some of them don't know how to apply critical thinking skills. Professor Mourtos pointed out that in order to be a critical thinker, you should be able to interpret, analyze, and evaluate given situations with a view to explain them effectively.

Being a research assistant, even for short time, gave me the power to contribute to very important research efforts in my home country. I am sure that this position has

helped me to gain experience and skills. One of these skills is a skill to analyze information and different data variables, interpret and present the data. Along with the analytical skills, I have improved my critical thinking skills and learnt about the importance of paying close attention to details and how to take into consideration multiple perspectives, using reasoning and evidence to support ideas. Working as a research assistant has also helped me to develop my computer skills since my work responsibilities were like a bridge between technical work and more generalized communication and organization tasks. I was able to use different computer programs to gather and organize data. This included using statistical software, creating visual presentations and illustrations, as well as assisting in documents' recording and preparing project related publications. In addition to these skills, I was doing my best to effectively manage multiple tasks, be more punctual and better organized, take responsibility, manage my time, and make decisions. Moreover, I have developed my communication skills by having meeting with team members and attending workshops. And most importantly, I was able to improve my research skills in survey design, reporting, statistical analysis, and information compilation.

Most importantly, my participation in a prestigious Oman-based research project has laid an important groundwork for future and probably more challenging research positions. I will be able to draw on it for the rest of my working life. In conclusion, I strongly encourage university postgraduate students and novice researchers to delve into research projects to gain more experience, learn new things and have a great opportunity to communicate with new people.



**Bushra Al Sabei**  
Centre for Excellence  
in Teaching and  
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# Studies Investigate Chromium Release from Rocks and Sediments in Oman

**Oman hosts one of the most extensive ophiolite outcrops. These rocks are holding natural occurring large amounts of Chromium (called also geogenic Cr) mainly through the existence of the spinel (metal) chromite.**

The ERANETMED CrITERIA is a European project that aims to assist water management organizations and water users in decision making when coping with water scarcity, climate extremes and contaminated water. Part of the project target is to investigate the Chromium Cr(VI) pollution. "CrITERIA" stands for Cr(VI) Impacted water bodies in the Mediterranean: Transposing management options for Efficient water Resources use through an Interdisciplinary Approach.

Oman represents the ground truth arid-end member in identifying the different pathways of Cr(VI) contamination in surface and groundwater due to arid conditions. Other countries which are participating in the project include Greece, Italy, Turkey and Jordan. These countries belong to the Mediterranean-circumference countries which they have similar geology to Oman and they are facing prominent arid conditions due to climatic change. Thus, areas of similar geology like Oman can be used as analogs of areas passing from semi-arid to arid conditions.

Daniel Moraetis Assistant Professor and Bernhard Pracejus, Associate Professor in the Department of Earth Sciences of the College of Science at Sultan Qaboos University are co-investigators of the ERANETMED CrITERIA. They said that SQU is participating as a partner in the European Project and it is investigating Cr(VI) release from natural sources (rocks and sediments). It is well known that Oman hosts one of the most extensive ophiolite outcrops. These rocks are holding natural occurring large amounts of Cr (called also geogenic Cr) mainly through the existence of the spinel (metal) chromite. Fortunately, Cr in chromite is in the form of Cr(III) which is the less toxic and less prone to be released in the groundwater. Cr(VI) is mainly derived from the natural alterations which involves oxidation from Cr(III) to Cr(VI).





Cr(VI) is the most toxic form.

According to Dr. Daniel, areas which are under investigation include Samail, Nakhl, Yuncal and Barka. Cr in Samail and Nakhl is the lowest identified and mainly in Cr(III) form, while some elevated concentrations identified in Yuncal and Barka area, in the form of both Cr(III) and Cr(VI). In Samail, Nakhl and Yuncal the project concentrates in former mining areas and in the open pits where groundwater is pouring out. It is well known that numerous areas in Oman have been excavated for metals like Cr, Cu and others. These areas are holding groundwater which is truly valuable in the present extreme arid conditions. The understanding of the water quality on these areas is vital in the post-mining period. In the Barka area, the study is concentrated in the groundwater through sampling wells. Barka area is a coastal area where extensive agriculture activities

are taking place. Coastal areas will experience increase in population and of investments (e.g. tourism), thus to secure the groundwater quality is mandatory for sustainable development especially in the present arid conditions.

Dr. Daniel said that the project continues to the investigation of the natural chemical reactions which might release Cr(VI) in groundwater. "Currently, two SQU undergraduate students are involved, while an SQU master student has completed her master thesis", he said.

In addition to SQU, the participants of the project are: National and Kapodistrian University of Athens, Dept. Geology & Geoenvironment, Greece; University of Basilicata Department of Sciences, Potenza, Italy; Mersin University Dept. of Geological Engineering Mersin, Turkey; The University of Jordan Water, Energy and Environment Center, Amman, Jordan; Agricultural Research Institute, Nicosia, Cyprus; and, National Technical University of Athens School of Civil Engineering, Greece.

Students sampling at Nakhl open pit mine





# The Story of a Lighting Revolution

Prof. Hiroshi Amano is a Japanese physicist and inventor specializing in the field of semiconductor technology. He was awarded the 2014 Nobel Prize in Physics together with Isamu Akasaki and Shuji Nakamura for the invention of efficient blue light-emitting diodes that has enabled bright and energy-saving white light sources. Currently, Prof. Amano is the Director of the Center for Integrated Research of Future Electronics (CIRFE) at the Institute of Materials and Systems for Sustainability (IMaSS), Nagoya University, Japan. Prof. Amano paid a visit to Sultan Qaboos University to explore research ties with the researchers and scientists in the University. Experts from his interaction with officials at SQU.

**Imprint: Could you explain on your invention of blue LEDs that revolutionized television and smartphone display technologies?**

Prof. Amano: Lighting plays a crucial role in the quality of life of humans. The development of light-emitting diodes (LEDs) has materialized more efficient light sources. Creating white light that can be used for lighting requires a combination of red, green, and blue light. Blue LEDs proved to be much more difficult to create than red and green diodes. During the 1980s and 1990s our research team could successfully use the difficult-to-handle semiconductor gallium nitride to create efficient blue LEDs.

**Imprint: How did you develop interest in material science and engineering especially in the invention of blue LEDs?**

Prof. Amano: I moved to Nagoya in 1979 to enter Nagoya University as a student of the Department of Electrical Engineering. In the introductory class to engineering, the lecturer explained that the ultimate goal of engineering is to enrich the lives of people. I was astonished with this explanation and felt that my view of study had suddenly opened through recognizing that the meaning of study is to benefit the people. As a result, I became interested in all fields of study offered by my department, particularly computer science. In 1982, when I was in my third year of university, I had to choose a dissertation research topic. Unfortunately, there were no topics concerning computer science, especially the design of central processing units. However, when I found that gallium nitride based blue LEDs could be researched in one of the labs, I decided to pursue this topic as my dissertation topic. At that time, Braun tubes were used as the monitors of PCs and in television systems. Because Braun tubes were so large, I thought that if I could develop blue LEDs, I could change the world by improving people's lives by providing the means to develop smarter PC and TV systems. At that time, I did not know how difficult it would be to develop blue LEDs.

**Imprint: What are the other possible applications of blue LEDs?**

Prof. Amano: Today, gallium nitride based LEDs are used in back-illuminated liquid-crystal displays in devices ranging from mobile phones to TV screens. LEDs emitting blue and ultraviolet (UV) light have also been used in DVDs, where the shorter wavelength of the light allows higher data-storage densities. Looking into the future, UV-emitting LEDs could be used to create basic yet effective water-purification systems, because UV light can destroy microorganisms. The UV-C wavelength range is the germicidal portion of the ultraviolet light section of the light spectrum which will deactivate the DNA in viruses and bacteria, effectively eliminating the chances of reproduction and thus disease. Once this occurs, the bacteria's DNA is unable to duplicate itself, thus it is unable to reproduce and therefore dies.

**Imprint: What are your current projects and future research plans?**

Prof. Amano: Currently our team is working on the applications of LED lights for water purification that I explained. We are conducting studies on wireless energy transfer technologies in order to make wireless charging of drones possible that makes them stay in the air 24 hours a day and 365 days a year. We are exploring the use of microwaves or laser beams to charge the drones without using any wires.

**Imprint: Could you comment on the purpose of your visit to SQU and its outcomes?**

Prof. Amano: We are keen to explore ties with scientists at SQU in the fields of materials technology and related fields. In this regard, we held discussions with the Vice Chancellor and academics in physics and engineering faculties. The future is promising as we could identify areas of mutual interest such as use UV lights for water purification and wireless charging systems.





# Institutional Communication Redefined



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