

MULA KAY

Tsanselor...

Kahanga-hanga ang galing na ipinamamalas ng mga mananaliksik na gumagawa ng Powered Air-Purifying Respirator at ng OstreaVent II. Malapit ng matapos ang kanilang mga disenyo at magiging malaking tulong ang mga ito sa matinding pangangailangan ng ating mga *healthcare workers* at pasyenteng may COVID-19.

Napakalayo na rin ang narating ng BNOC Hotline 155-200 na patuloy na tumatanggap ng mga tawag mula sa publiko tungkol sa kanilang karamdaman, COVID man o hindi at ng donasyon mula sa ating mga kaibigan. Ang isang bagong yugto na ating aabangan ay ang pagbubukas ng PGH Telemedicine Hub gamit ang ating Hotline.

Mababasa sa isyung ito ang mga proyekto na patuloy nagbabahagi ng kaalaman tulad ng ating mga dentista sa kanilang *online teleconsultation portal* at TVUP COVID Series, Episode 2 "Protecting Oneself", kung saan pag-uusapan ang mga paraan para makaiwas sa COVID-19.

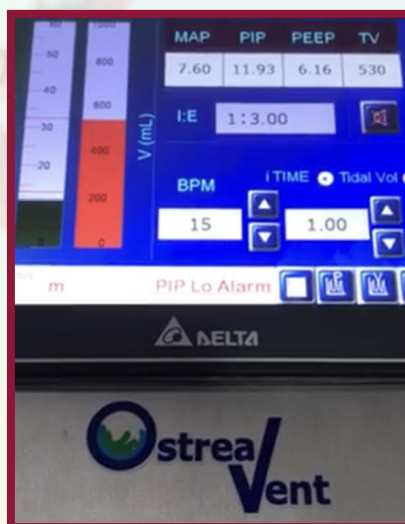
Ating pakinggan din ang mga awit pangharana ng UP MedChoir. Pampakalma ng kaisipan at kalooban sa gitna ng krisis ang kanilang mga tinig!

Patuloy ang hamon ng 'New Normal' sa larangan ng edukasyon at angkop dito ang mensahe ni NTTCHP Dean Melfor Atienza - "ICE in FIRE" (Integration of Computer Technology Education in the Fourth Industrial Revolution).

Lalong **kahanga-hanga** ang ipinakitang tibay ng loob at pananalig ng dalawa nating doktor. Sana ay maging inspirasyon sa lahat ang kanilang naging karanasan dahil sa COVID-19.

At ang higit na **kahanga-hanga** ay ang ating Panginoon na nagbibigay ng labis na biyaya sa bawat isa at sa buong UP Manila para sa ating mga pangangailangan upang talunin ang COVID-19!

OstreaVent II goes to Safety Clinical Trial



Two months after rising to the challenge of UPM Chancellor Carmencita Padilla and College of Medicine Dean Charlotte Chiong for the development of locally manufactured adult ventilators, the OstreaVent II is now on its final stages of testing prior to a safety clinical trial. Dr. Enrique Ostrea, corresponding member of the National Academy of Science and Technology and adjunct research professor of UPM National Institutes of Health, formed a core group composed of Engr. Alexander

Paran, Engr. Robert Dizon, Dr. Manuel Jorge II, Dr. Ma. Kriselda Tan, Dr. Herbert Uy, Dr. Edward Faustino, and Dr. Maria Esterlita Uy to upgrade the neonatal OstreaVent I into an adult ventilator, OstreaVent II.

The OstreaVent hardware was manufactured, some by 3-D printing, at the Metals Industry and Research Development Center (MIRDC-DOST) headed by Engr. Dizon. Display programming was also developed by his MIRDC group. Engr. Paran developed and analyzed computer simulations and modeling of the different ventilator scenarios. A weekly online discourse of clinical scenarios, lung physiology, and usual ventilator modes, especially among COVID-19 adult patients, with the medical team helped in the development of the final model of the OstreaVent II.

From a neonatal pressure-limited time-cycled ventilator, the OstreaVent II can now handle higher pressure settings needed by adults. In addition, it now has a volume mode which is capable of tidal volumes as high as 700 ml and more. In the display module, it can now show the volume and flow scalar graphs aside from the pressure graph which was already installed in the neonatal OstreaVent I. Both OstreaVents I and II have a USB attachment which can record 1,500 breaths. A more complete analysis of recorded volumes and pressures at different ventilator settings will be performed and reported.

Recently, the OstreaVent II has undergone simulation testing at the Pulmonology Laboratory of the Philippine General Hospital. On attaching the OstreaVent II to the Michigan Instruments Lung Simulator (owned by Dr. Abundio Balgos), the tidal volumes and pressures were found comparable to the ventilator's visual display as well as the measurements extracted from the USB. Once these tests are approved, the OstreaVent II will go for safety clinical trials and subsequently will be for compassionate use by adult patients during this COVID-19 pandemic.

Dr. Ma. Esterlita Uy

ICE in FIRE: Enhancing Learning through Technology

World Health Organization Director-General Tedros Adhanom Ghebreyesus warned that COVID-19 “will be with us for a long time.” Since the University’s mandate remains despite the pandemic, what do we do? When schools open, we have to be ready for blended learning (BL), many experts advise. Many teachers, however, complain that they are not cut out for this.

What is BL? Definitions vary but there are common points. First, BL is a systematic integration of different modes of delivery, models of teaching, and styles of learning; and second, this occurs through both face-to-face and computer-mediated learning. BL’s use preceded the computer age when children of lighthouse keepers in Canada received instruction through Correspondence Courses in 1919.

A hundred years hence, BL now serves as a bridge that closes the gap of space, time, path, and pace. Concepts that students need to master are thoughtfully wrapped in a mode that is deemed most effective and efficient using appropriate information and communication technology. Teaching could be viewed as a whole package to facilitate learning. The essence of this instructional delivery is captured in Mishra and Koehler’s 2016 framework, Technological Pedagogical and Content Knowledge (TPACK).

BL requires strong institutional commitment and support to all sectors, which include setting up of the learning environment, capacity building, and internet access. The Virtual Learning Environment and the upcoming CANVAS platforms, upgrading of facilities and capabilities in Information and Communication Technology, faculty development programs, incentives for blended course developers, and computer loan program are concrete evidences of UP Manila’s resolve to turn this framework into reality.

Faculty and students need to be oriented (or re-oriented) on BL, not only as a feasible option but as an essential learning tool.

Teachers are at different levels of integration of technology with their courses, according to Ruben Puentedura. We can, from our current level eventually move up. Enhancing teaching through technology starts with **substitution** of one form to another. In an ethics course, for example, the teacher provides students with soft instead of hard copies of handouts of ethical principles. Students are assessed through a reflection paper submitted through email instead of answering an essay examination in class.

Next is **augmentation** or improving classes using technology. The Ethics teacher provides link to a video of a real patient whose rights

were violated, then use Google forms with questions intended to challenge students to identify and analyze ethical dilemmas in the video.

Modification involves significant change in the design of instruction and tasks. The same video clip with additional online articles are provided. Students come up with a twitter or blog on patient autonomy.

Redefinition is creation of new course designs and novel tasks. Students can engage in a debate through zoom and work collaboratively to come up with cloud-based infographics on patient’s rights.

The advances of the Fourth Industrial Revolution (FIRE) makes integration of computer technology and education (ICE) a reality.

Dean Melflor A. Atienza, NTTCHP



UPCD volunteer alumni swab employees

UP Dentista Para sa Bayan

Consistent with the College of Dentistry’s (UPCD) vision statement, the faculty, staff, and students collaborated to address the threats of COVID-19 and the restrictions of the Enhanced Community Quarantine (ECQ). The ECQ imposed limitations on their ability to fully serve not just their patients’ oral health needs but also the community at large. As public service is deeply engrained in each member of UPCD, the virus and lockdown did not keep them from fulfilling their duties.

Dentists all over Metro Manila were unable to open their clinics to attend to the concerns of their patients due to COVID-19. To address this, the UP Dentistry Alumni Association (UPDAA) launched the “UP Dentista Para sa Bayan,” an online teleconsultation portal for anyone in need of dental advice. Prospective clients can post their questions and the page will assign a volunteer dentist to attend to their concerns in private. All consultations are free for the duration of the community quarantine.

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UPM SIBOL Designs a Powered Air-Purifying Respirator

Among the Personal Protective Equipment (PPE), the Powered Air-Purifying Respirator (PAPR) is one of the best for healthcare workers (HCW) performing high-risk procedures which cause aerosol or droplet spread. A PAPR uses a pump that moves contaminated air through a high-efficiency particulate filter. The contaminant-free air is then breathed in by the HCW. Unfortunately, PAPRs are scarce and prohibitively expensive.

The UP College of Medicine Surgical Innovations and Biotechnology Laboratory (SIBOL) did a review of the quality parameters of the National Institute for Occupational Safety and Health of the US FDA, and an initial evaluation of locally and internationally available PAPRs. The objective was to innovate

and develop a local product with equivalent protection and safety. Features that needed to be addressed are continuous airflow, carbon dioxide retention, user comfort, and communication.

The SIBOL PAPR team is composed of four clinicians from UP Manila, one engineering professor from UP Diliman, one industrial designer, and one medical intern with a Mechanical Engineering degree. These seven have never been in the same room together. Collaborating online, the team used an ideation board to assess what an ideal PAPR is, identify what needed to be done, and source materials despite the lockdown. Countless hours were spent online searching for appropriate blower and filters that could remove 99.7 percent of particulates. Slowly, the helmet



design was refined, and through courier services, all the needed parts were gradually completed. The PAPR has gone through many iterations and testing protocols were devised to meet the marks for international accreditation. The design and proposal were approved by the DOST-PCHRD.

Dr. Samuel Grozman

UP DENTISTA PARA SA BAYAN...

To further reach the people nationwide, radio, television, and news agencies have broadcasted the efforts of our graduates in addressing the urgent oral health concerns of Filipinos.

The first ever continuing education webinar entitled **"Trash Talk: Dental Waste Disposal in the New Normal"** was offered by the tripartite of UPCD, UP Dental Alumni Association, and the Academy of Dentistry International, Philippine Section to help prepare dentists for the new normal in the practice of dentistry.

UPCD faculty and students responded and continue to volunteer at the UP PGH *Bayanihan Na!* Operations Center. UPCD alumni were mobilized to volunteer at the UP Philippine General Hospital to do swab testing for its employees and patients.

On the home front, the student advisers, student council, and student relations officer regularly check on the UPCD students. Counselling and Emergency hotlines are available for students who need someone to talk to. As there were several students who were stranded in Metro Manila, food and other necessities were donated by faculty and friends. Donations for frontliners from UPCD constituents and alumni varied from food, PPEs, disinfectants, and tooth brushing kits, among others. Meanwhile, UPCD opened its doors to frontliners by providing a temporary shelter for the UPM-PGH guards and PhilCare employees.

Jessica K. Rebuena Santos, DDM, MCD

WELCOME TO SIBOL, Migs!

I'm a medical intern at the PGH, but never in my whole life did I imagine I'll become a doctor. After becoming a Mechanical Engineer in 2014, I applied for the MS program in my department, hoping to do biomedical device research. But my research adviser had a better idea, he encouraged me instead to take up medicine.

I feel very fortunate that I can use both my engineering and medical skills to help people in this pandemic by being part of a team - the UPCM SIBOL PAPR team under Dr. Sam Grozman. We are building a PAPR for frontliners, like a "space suit" for the healthcare workers. My task is designing and testing the electronics and software that will control the respirator. A respirator should be responsive to the user's breathing and reliably perform under a range of environmental conditions. Fabrication is helped by the availability of low-cost and open source electronics. We used the Arduino platform, an open source microcontroller as the "brain" of our respirator. Several sensors communicate pressure and air velocity information to the Arduino and it then sends commands to the blower to adjust airflow. How fast and by how much the device responds is based on safety standards for PPEs and basic knowledge of respiratory physiology. Hopefully, our finished prototype can give our frontliners a much-needed upgrade.

Intern Miguel Albije, UPCM Class 2020

The doctor takes charge of his patient; but, what if the doctor becomes the patient? Two cardiologists who contracted COVID-19 shared their heartwarming journey during the Grand Rounds of the UP-PGH Department of Medicine last May 19, 2020.



Dr. Rody Sy and Dr. Nelson Abelardo

WHEN THE DOCTOR IS THE COVID-19 PATIENT

Dr. Rody Sy, labelled as PH280 in DOH's tracker, gave a scholarly presentation of his experience beginning with his medical profile, symptoms, and hospital course complete with lab test results like chest x-ray and CT scan (showed the trainees what an excellent presentation is, himself being a Professor Emeritus and National Academy of Science and Technology Academician!). His doctors "threw the book at him"; meaning, he received all forms of treatment such as antivirals, antibiotics, immunomodulators, multivitamins, prone positioning, high flow oxygen, and even Chinese medicines (from his relatives). Airlifting him abroad was even considered to avail of the experimental drug remdesivir!

The long wait for RT-PCR result was agonizing even if he expected the positive result. His was a harrowing and frightening experience- he was lonely, isolated, and had to do everything by himself like pulling his intravenous fluid stand for hourly visits to the toilet because of diarrhea and frequent urination. He remembered how painful the needle punctures were as he had them several times a day. He was afraid of being intubated because of his shortness of breath and low oxygen levels. Learning of several colleagues' deaths during his most critical period made him think of the worst.

But all these caused a spiritual revival for Dr Sy. Later, he had daily devotional prayers with his nurse

who happened to be Protestant like him. He prayed to God for mercy and felt stronger knowing so many people were praying for him. He soon realized it was because of God's grace that he survived!

God has a mission for him in his remaining years. "Like a small boat sending big waves into motion" is how he pictured himself. And his advice to colleagues? **Be compassionate and engage clearly and truthfully with your patients and their family.** He ended his talk by saying, "I still have a lot of fight left in me!"

Dr. Nelson Abelardo was very candid about how he felt before contracting COVID-19. He had a comfortable life, was in tip-top shape, and felt invincible. He had that certain *yabang* which is not necessarily arrogance, but having that sense of control over his life.

But alas! His life was shattered when he and his wife had fever and diarrhea and were admitted. COVID-19 sent shivers in the deepest recesses of his body. "I was staring death in the eye", he recounted. To him, the thought of dying spiritually unprepared was terrifying. During the wait for the RT-PCR result, anxiety was killing him faster than COVID-19. He had shortness of breath, nausea, bloating, and diarrhea; food was unpalatable and unattractive. He felt absolutely helpless knowing his wife was just in the next room. Solitude and fear broke him to

pieces. Talking to God in an intimate way came rarely before, but at that time he asked, "Lord, please help me!" He opened himself to God through Jesus with prayer, reconciliation, and some bargaining. He described this as the turning point in his life. Soon, everything started improving, "crispy pata" was delicious again!

He now knows how it feels to be a patient. "Health is real wealth, do not take it for granted" is his advice. Fame, fortune, social status, and power are nothing. **What really matters is your relationship with God, the only One who truly saves and can make you whole.**

Both cardiologists expressed their gratitude to their doctors and those who took care, helped, and prayed for them. Dr. Anselmo Tronco, Chair of the Department of Psychiatry and Behavioral Medicine, gave the summary of two doctors who lived through COVID-19, went through the various stages of grief; but in the end, went beyond grief and found meaning in their ordeal.

Dr. Mark Anthony Sandoval





The “Kalusugan ay Karapatan” series being produced and broadcast by TVUP imparts vital information on health issues. Ongoing is the production and streaming of episodes on COVID19-related topics hosted by UPM Chancellor **Dr. Carmencita Padilla**. Episode 2 in this COVID-19 series tackled the topic **Protecting One’s Self** with **Dr. Regina Berba**, chair of the PGH Infection Control Unit as resource person.

The following are some of the myths on COVID-19 being perpetrated on social media that Dr. Berba emphatically disproves. To be well-informed of all the important facts about COVID-19, be sure to watch all the episodes on [TVUP](#). Full program of this episode can be viewed [here](#); and for more information, please read [this](#).

Mobile phones can transmit the coronavirus



Viruses can’t travel on radio waves/mobile networks. COVID-19 is spreading in many countries that do not have 5G mobile networks.

Wearing gloves will protect me from the COVID-19 virus



You can still pick up the infection when you touch your face and the contamination goes from your gloves to your mouth, nose, and eyes, allowing the virus to gain entrance into your body. Regularly washing your hands offers more protection than wearing rubber gloves.

Gargling lemon juice will kill the virus



Unfortunately, NO. Read [this](#).

COVID-19 can be caused by flies or by mosquito bites



To date, there has been no information nor evidence to suggest that the new coronavirus can be transmitted by mosquitoes or flies.

Sunbathing or taking a bath with very hot water will cure COVID-19



Exposing yourself to the sun or taking a bath with very hot water do not prevent or cure COVID-19. If water is extremely hot, it can actually harm you. Countries with hot weather have reported cases of COVID-19.

Garlic and hot pepper will prevent COVID-19



Garlic is a healthy food that may have some antimicrobial properties. However, there is no evidence from the current outbreak that eating garlic protects people from COVID-19. Hot pepper is tasty but adding hot pepper to your soup or meals does not prevent or cure COVID-19.

I can take some medicines to prevent COVID-19



To date, there is no specific medicine recommended to prevent or treat COVID19. Some specific treatments are under investigation and are being tested through clinical trials. The World Health Organization is helping accelerate research with a range of partners.

Spraying bleach will kill the coronavirus



DO NOT, under any circumstance, spray or introduce bleach or any other disinfectant into your body. These substances can be poisonous if ingested and cause irritation and damage to your skin and eyes.

Hands require special cleaning methods to prevent COVID-19



Hand dryers are not effective in killing the virus. Ultraviolet (UV) lamps should not be used to disinfect hands or other areas of the skin. UV radiation can cause skin irritation and damage your eyes.

Megadoses of Vitamin C will protect you from COVID-19



No supplement will cure or prevent disease. With COVID-19 pandemic, it’s especially important to understand that no supplement, diet, or other lifestyle modification other than physical distancing, also known as social distancing, and proper hygiene practices can protect you from Covid-19. Read more [here](#).

Beware! COVID-19 is a death sentence



Catching the new coronavirus does not mean you will have it for life. Most of the people who catch coronavirus can recover and eliminate the virus from their bodies with adequate supportive care.

Almost three months into its operations, the UP-PGH COVID-19 *Bayanihan Na!* 155-200 Hotline has grown from being a small aspect of the COVID-19 response to an integral component in expanding the telemedicine efforts of the hospital. Our colleagues from Unexus Medical Solutions, Inc. have been collaborating with the BNOC core group throughout its evolution.

This hotline has been using the MedAlert application developed by Unexus to record information from calls and provide guidance on triaging. Phone scripts developed specifically for COVID-19, which include instructions on testing, admission, self-care, and preventive measures, automatically appear in the MedAlert interface for the agents. The integration of the COVID-19 clinical guidelines into the algorithms, scripts, and agent

UP-PGH *Bayanihan Na!* Operations Center partners with Unexus Medical Solutions

interface is a step toward high-quality care to offset the limitations of phone consultations. Unexus worked with creative solutions that more than adequately addressed the requirements and vision of the *Bayanihan Na!* Operations Center.

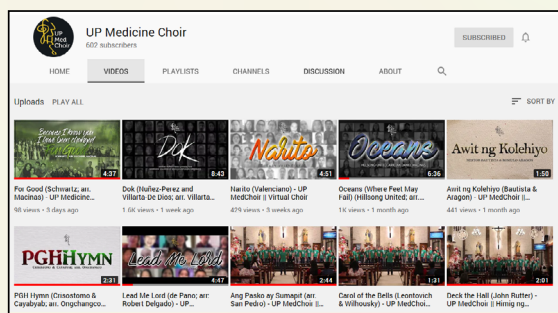
Unexus Medical Solutions, Inc. is a software solutions company started in 2015 that is owned and run by UP and Ateneo graduates with extensive experience in a wide range of industries from technology, fast-moving consumer goods (FMCG), utilities, and healthcare. Its first product, MedAlert, has grown from being an Electronic Medical Record (EMR) to an entire patient-friendly platform that includes

scheduling appointments and queuing for testing.

When asked about his decision to work with UP-PGH on the *Bayanihan Na!* project, Unexus Chief James Mercado said: *"I believe it is natural for UP alumni to give back to the School or go to government service. Being one of the founding members of NowheretogobutUP Foundation, which is an alumni group that helps improve the UP Varsity Program, I have always felt the urge to give back to UP; and more importantly, help make things better by improving the involvement of the UP alumni."*

This partnership underscores the need for meaningful collaborations that play on our shared values and complementary abilities in achieving our common goal.

Dr. Diana Lachica



Virtual Serenade by UP MedChoir

Amid this pandemic, concerts and performances worldwide have all been postponed. However, the MedChoir members and alumni share virtual choir performances online to uplift the souls of all who are affected by COVID-19.

From their own homes, MedChoir members performed *"Oceans (Where Feet May Fail)"* by Hillsong United, arranged by one of the choir's resident arrangers, Ian Macinas. The song is for those experiencing challenges during these difficult times and is a salute to our frontliners: the healthcare

workers, uniformed personnel, and workers of essential services. As a tribute to our fallen mentors and heroes, the choir also shared a recording of

"Salamat sa Ating Guro," a poem penned by the late Dr. Raul Jara, put to music by Henry Alumbro,

and arranged by Christopher Borela. The MedChoir alumni also created several virtual performances dedicated to their colleagues and most especially to the patients who continue to inspire them to serve. They inspired many with *"Lead Me Lord,"* *"Narito,"* the TRP classic *"Dok"* by UPCM Class 2004, the UPCM hymn *"Awit ng Kolehiyo,"* and the *"PGH Hymn"* as a tribute to all the frontliners. It collaborated with the UP Manila Classical Ensemble and UPCM Class 2023 with a rendition of *"Di Niyo Ba Naririnig?"* an adaptation of *"Do You Hear the*

BAYANIHAN NA!

PROTOCOLS FOR HCWs WHEN ENTERING THE HOME

- 1. DO NOT TOUCH ANYTHING** when you come home.
- 2. TAKE OFF YOUR SHOES IMMEDIATELY.** Leave shoes outside or near the door. Disinfect shoes afterwards.
- 3. PUT THINGS IN A BOX PLACED BY THE DOOR INSIDE YOUR HOME.** Include bag, keys, cellphone.
- 4. TAKE OFF YOUR CLOTHES AND PUT IN A PLASTIC.** Wash with bleach in warmest water possible.
- 5. TAKE A SHOWER AT ONCE AFTER ARRIVAL.** Wash face, neck, hands, wrists thoroughly.
- 6. CLEAN GLASSES, CELLPHONE.** Wear gloves first then clean with soap and water, or 60% ethanol.
- 7. CLEAN OTHER ITEMS BROUGHT FROM OUTSIDE** Wear gloves first then clean with bleach solution (4tsp in 1 quart water)

REMEMBER - IT IS NOT POSSIBLE TO DO TOTAL DISINFECTION. We can only reduce the risk.

If COVID-19 symptoms such as fever, cough or difficulty breathing are experienced, notify UPHS immediately:

UPHS HOTLINE
0977 826 4560
0925 369 5898

TALUNIN NATIN ANG COVID-19!



ERRATUM

In the article **CAS shares its COVID-19 projects** in Issue 5, the 3rd subhead should read: *"Can't Go to the Gym? The Department of Physical Education's Exercises on Zoom Got You Covered."*

People Sing" from *Les Misérables*.

The choir partnered with the Frontliners' Kitchen to provide food for frontliners and with the College of Public Health by sharing information online on COVID-19.

Alec Bukuhan