

# FEDERAL NETWORK OF VOCATIONAL, SCIENTIFIC AND TECHNOLOGICAL EDUCATION AGAINST COVID-19

EDITED BY CONIF COMMUNICATION OFFICE





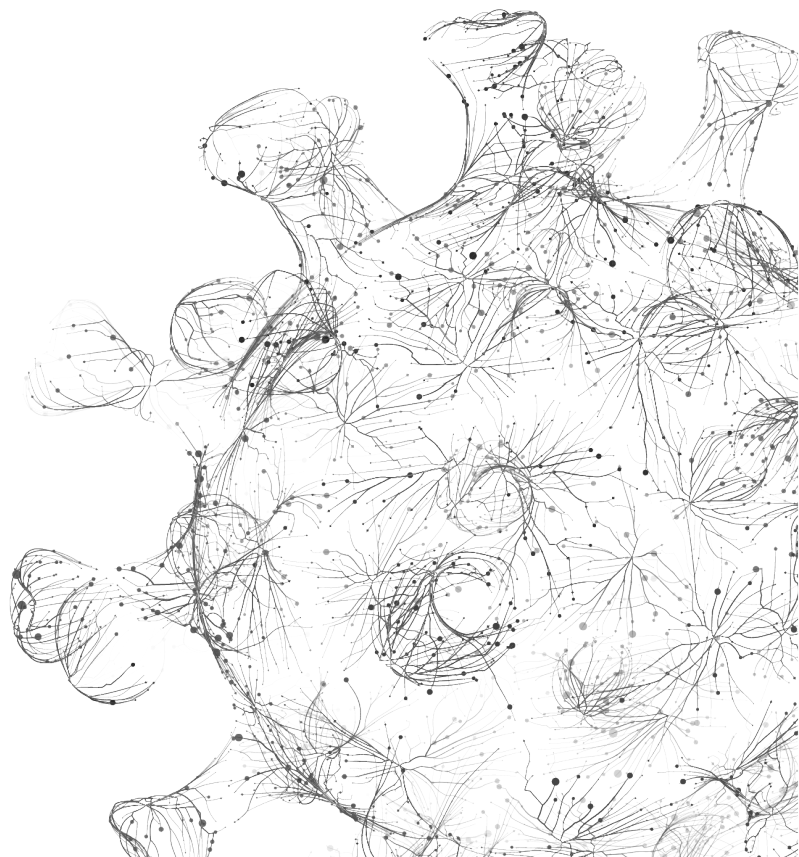
# FEDERAL NETWORK OF VOCATIONAL, SCIENTIFIC AND TECHNOLOGICAL EDUCATION AGAINST COVID-19

EDITED BY CONIF COMMUNICATION OFFICE

Campos dos Goytacazes



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## PREFACE

The year 2020 is certainly being a turning point for humanity, in all the aspects of our existence and coexistence, especially for education and, thus, for the entire Federal Network of Vocational, Scientific, and Technological Education.

Over a hundred years old, the Brazilian vocational and technological education had to adapt and restructure itself in light of the new Coronavirus (COVID-19) pandemic. To respect the necessary social distancing, the institutions suspended their on-site educational and administrative activities; nonetheless, they kept contributing to facing the increasing advance of the infection in the country, while also seeking to reinvent their own educational activities.

The institutions within the Federal Network (38 Federal Institutes of Education, Science and Technology; 2 Federal Technological Education Centers, and the Colégio Pedro II), supported by their faculty, technical-administrative staff, students, and other volunteers, joined their scientific and technological knowledge and skills with their sensitivity and responsibility before the social drama and need to face the greatest public health problem of this century, in order to minimize its harmful impacts on human life in the different and peculiar territories of its institutional scope.

Our excellent, free, public, and socially referenced model of education has carried out a myriad of initiatives, with both public funding and private donations, by producing and developing technological devices to help and support the Brazilian population



in the fight against COVID-19, as well as implementing a set of solidary social actions.

In large and small cities, as well as in remote places where the federal, state and municipal governments often struggle to reach, the Federal Network institutions played their role, so that health professionals could do their job, small rural farmers could still sell their products, and students and their families would not starve.

This digital book “Federal Network of Professional, Scientific, and Technological Education in the fight against COVID-19” details several activities, such as the production of 70% alcohol, the manufacturing of Personal Protective Equipment (PPE), as well as repairing medical ventilators, and the creation of applications to monitor the pandemic evolution.

Despite the difficulties and uncertainties of the last four months, we can rightly affirm that investments in education, science, and technology are essential for structural transformations to take place in a country, for the benefit of its institutions and population. Therefore, we wish that such positive actions and the funding of excellent, free, public educational institutions may last and be intensified in the post-pandemic period.

Fraternal regards,

**Jefferson Manhães de Azevedo**

*Rector of the Instituto Federal Fluminense (IFF)*

*Coordinator of the International Relations Chamber and the UNESCO/UNEVOC*

*Center within the Conselho Nacional das Instituições da Rede Federal de*

*Educação Profissional, Científica e Tecnológica (Conif).*



## WHO ARE WE?

For over 110 years, the **Federal Network of Vocational, Scientific, and Technological Education** made a commitment to Brazil: to offer public, free-of-charge, high-quality vocational education.

Our work began in the early 20th century when the Federal government created the Schools for Apprentice Craftsmen – a first milestone for the national policy for vocational education.

In the course of the last hundred years, the **Federal Network** has undergone many structural changes and improvements. Currently, it comprises:

# ABOUT THE FEDERAL NETWORK

## INSTITUTIONS ALL OVER BRAZIL

The Federal Network of Vocational, Scientific, and Technological Education is present all over the country, promoting social inclusion and offering free and high-quality public education to about one million students. It represents a total of 661 schools in 578 Brazilian municipalities.



- 38 Federal Institutes of Education, Science, and Technology;
- 2 Federal Centers for Technological Education (Cefet);
- Colégio Pedro II;
- 22 Technical Schools linked to Federal Universities.



## WHAT DO WE DO?

From high school to post-graduation, our educational model is based on the tripod: **teaching, research, and extension.**

The public funding we receive is **invested** in the **training and qualification of millions of young people and adults.**

All of our students are **prepared** to work in various sectors of the economy, with a focus on local, regional, and national **socio-economic development.**

Our students acquire both theoretical and practical knowledge, based on an **inclusive, humanistic, and integral approach to learning**, through which they are encouraged to seek **solutions** to **real problems** of society - such as the ones we are facing now during the **Coronavirus (Covid-19) pandemic.**



## HOW ARE WE HELPING BRAZIL AND THE WORLD IN THE FIGHT AGAINST CORONAVIRUS?

Since March 11th, 2020, when the Coronavirus outbreak was considered a **pandemic** by the World Health Organization (WHO), the institutions of the **Federal Network** are **mobilized**.

Managers, faculty, students, and staff are united to take action and develop projects in **cooperation** with **efforts in other countries** to stop **contamination, hospitalization, and the death toll**.

The work began with the production of **hand sanitizer** at the laboratories of the institutions of the Federal Network, combined with a **massive campaign** in the official communication channels, stressing the importance of **social isolation and social distancing** to prevent Coronavirus transmission - one of the main orientations of the WHO.

In a short period, the initiatives expanded to the production of **Personal Protective Equipment (EPP)**, manufacturing and repairing of **mechanical ventilators**, as well as developing alternative projects to this kind of equipment.

We created **technological ecosystems** to help the public sector, **applications** to monitor the national and global progress of the pandemic e **platforms** that contribute to preserving company-consumer relationships in various economic sectors.

HOW ARE WE HELPING BRAZIL AND THE WORLD  
IN THE FIGHT AGAINST CORONAVIRUS?

Furthermore, we **repatriated students, donated food and hygiene kits**, and we gave support to the academic and external communities in every aspect that might be, directly or indirectly, affected by one of the biggest **healthcare challenges** of our days.

We combined **knowledge, innovation, technology**, and a tremendous drive to help - maybe in an unprecedented attitude - to answer demands that crossed borders in the **fight against Coronavirus**.



The goal of this e-book “**The Federal Network of Vocational, Scientific and Technological Education against Covid-19**” is to make public the work that has been carried out by the Brazilian Public Vocational Education to support...



**healthcare professionals** and many other workers that are in the frontline of this fight;



thousands of **scientists** that are searching for vaccines and medicines;



over **7 billion people** in the world that are struggling with isolation, job loss, hunger, and poverty;



and, above all else, **human life.**



**NORTH REGION**





## **INSTITUTO FEDERAL DO ACRE - IFAC**

### **Campus Xapuri produces hand sanitizer to donate to the Municipal Health Secretariat**

*Ifac's unit is also producing soap for donations by the Municipal Secretariat of Social Assistance.*

Xapuri Campus of the Instituto Federal do Acre (IFAC) is producing hand sanitizer, one of the products used in the combat and prevention of the new Coronavirus. The output will be donated to the Municipal Health Secretariat.

Xapuri Campus director, Joel Bezerra Lima, explained that professors and laboratory technicians from Chemistry and Food Technology departments are assisting the production.

“This is a time for care and solidarity. Our staff is working voluntarily and bringing all their knowledge to the production of the material that will be destined to the municipality. This is also a way of taking care of others,” said professor Lima.

According to the director, in addition to hand sanitizer, the campus is also manufacturing soap. Production will be donated to the city, through the Municipal Social Assistance Office. Families

registered as socially vulnerable by IFAC's Student Assistance Center in Xapuri will also receive it.

As highlighted by professor Lima, the hand sanitizer production was supported by the company Aguardente Jiboia, which donated the raw material, as well as by Xapuri City Hall, which provided packaging for the final product.

“Partnering with other institutions has helped us produce the materials that are being donated to the Xapuri Health Secretariat. We will continue production of alcohol 70% (hand sanitizer), in case other companies are interested in providing us alcohol 96%”, he added.

As for soap production, the Xapuri campus director also emphasized that they welcome package donation from companies.

### ***WHO Recommendations***

According to the director, hand sanitizer and soap production is being carried out in the campus' laboratories observing the recommendations from the World Health Organization (WHO) and other medical and sanitary authorities regarding the number of people together in an environment.

“We have received messages and calls from people willing to contribute, but we have to do everything according to WHO guidelines, which means avoiding crowding to prevent contamination. We

are grateful for the support of our faculty and staff, who have been working on the production line, as well as to those who have shown solidarity and disposition to help. This is a moment to be a united front, but also to be careful,” said professor Lima.

Source:

[Communication Department of the Instituto Federal do Acre \(IFAC\)](#)



## INSTITUTO FEDERAL DO AMAPÁ - IFAP


### **IFAP offers psychological support for students, public servants and outsourced workers**

*Virtual psychological counseling must be scheduled by email and sessions are made through messaging application, phone or email.*

Insight of the social isolation caused by the spread of Coronavirus, since March 25th, the Instituto Federal do Amapá (IFAP) have been offering remote psychological assistance to take care of the mental health of its students, faculty, and staff.

The service has already accumulated significant numbers: so far, the four psychologists engaged in the initiative have assisted 26 people, 24 of whom are students and 2 are public servants. In some cases, up to 4 psychological attendances per person have already been carried out. Reports show that the most frequent complaints are related to anxiety generated by social isolation, by the drastic routine changes and by the fear of falling ill.

Appointments are still available for Ifap's entire internal community. To access the service, applicants must request support through the email [saudemental@ifap.edu.br](mailto:saudemental@ifap.edu.br) and remote sessions




with a psychologist, via email, phone, or messaging apps, like WhatsApp, will be scheduled.

Support is given by Psychology professionals from Macapá and Porto Grande campuses. Psychological counseling is part of the “Ifap against Coronavirus” Campaign, coordinated by IFAP’s Crisis, Combat Measures and Guidelines Committee on the advancement of COVID-19 (CCMO-IFAP), which involves the Pro-Rector of People Management (Progep), campuses’ Student Assistance Departments (Daes) and psychology professionals collaborating in other activities. Long-distance duty will take place while on-site activities are suspended.

According to Diogo Branco Moura, Pro-Rector of People Management, “at this moment, it is very important that the institution maintains initiatives that promote the well-being of the academic community”.

Professor Moura also said that “combined with other administrative responses, remote psychological counseling allows students, civil servants, and outsourced workers to deal with this moment and help them feel confident in overcoming any crisis arising from this period”.

Elaine Aparecida Fernandes, a psychologist from Macapá campus, emphasizes that sometimes “the impacts on the mental health that comes from this amount of information are countless”. Thus, it is always important to verify the veracity of the information to better assess the circumstances.



She also states that it is worth taking some precaution and following some basic tips to cope with anxiety during this pandemic. Some of them includes: easing one's mind, by avoiding being overbeared with information on the topic; following only guidelines that are concerned with what one can control, such as personal hygiene; maintaining a healthy diet and practicing physical exercises at home; seeking activities to occupy one's spare time: online courses, TV series, literature, for example.

Elaine Fernandes also points out that it is necessary to seek specialized guidance when one, or someone close to them, starts to have catastrophic thoughts about the pandemic or the circumstances related to it, such as the social isolation and other imposed restrictions.

The psychologist also points out that the March 19, 2020 recommendation from the 10th Regional Council of Psychology for Pará and Amapá Region (CRP 10) allows remote psychological counseling, based on the determination that: "assistance in all modalities should take place observing the right to appropriate safe distance from the students and employees."

***Psychological duty - remote reception***

Team:

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Source:

[Information, Communication and Events Department of the Instituto Federal do Amapá \(IFAP\)](#)



## INSTITUTO FEDERAL DO AMAZONAS - IFAM


### IFAM in the fight against Coronavirus

The Instituto Federal do Amazonas (IFAM) is producing face shield components destined to health professionals working in the treatment of patients with Covid-19. Production takes place at the Harlan Marceline Technology Center (CTHM), located at *Manaus Distrito Industrial* campus, which is part of the 3D printing network of the Prusa model.

The Institute is capable of producing 50 face shields a week and this quantity might increase if more 3D printers are put into operation, stated Professor José Pinheiro Queiroz Neto, IFAM's Pro-rector of Research, Graduate Studies, and Innovation. This is a way that IFAM found to contribute to the national effort against the Covid -19 pandemic, he explained.

Also, according to Professor Antônio Venâncio Castelo Branco, Rector of IFAM, by engaging in component production, the institution has the opportunity to give back to society their investment in knowledge production, as well as in their staff and students. He also said that another three 3D printers would be available to assist the production of face shields.





“In addition to the production of protective equipment for health professionals, we are waiting for the delivery of raw material to produce hand sanitizer, which will also help the fight against the spread of Coronavirus,” said Professor Castelo Branco. The output will be distributed free of charge to health professionals working against Covid-19.

Professors Marlos André Silva Rodrigues e Hillerman Ferreira Osmidio Lima, as well as the student Alisson Franckin Gomes Noronha, integrate IFAM's team, which is led by professor José Fábio de Lima Nascimento. They are assisted by Alice Nascimento, a physician, who is responsible for the testing and verification of the equipment.

Source:

[Communication Department of the Instituto Federal do Amazonas \(IFAM\)](#)




## INSTITUTO FEDERAL DO PARÁ - IFPA

### **Science in favor of society: IFPA promotes prevention against Coronavirus all around the state**

Due to the Covid-19 pandemic and World Health Organization (WHO) recommendations, the Instituto Federal do Pará (IFPA) has interrupted all academic activities. That does not mean, however, that IFPA has stopped providing services to the community. In addition to preventive measures implemented by the Institute, such as implementing remote work to its staff, a lot more is being done to assist society in the fight against Covid-19.

“The education sector, like all others, is trying to find ways to minimize the impacts of the new Coronavirus pandemic. Teachers and technicians are mobilized to provide society with a series of tools that can facilitate people’s lives in different communities. Researches, as well as guidelines for coping with this pandemic, both for preventing and fighting the Coronavirus, are being carried out” explains professor Claudio Alex da Rocha, IFPA’s rector.

The actions have been carried out by professors, administrative workers and, students of the institute, by using laboratories, and the knowledge developed on the campuses. IFPA has also established partnerships to implement those activities. Belém campus is an




example. It has signed a partnership with the Municipal Health Secretariat (Sesma) to work on the conversion of PA ethyl alcohol into 70% liquid alcohol solution, which produced 72 five-liter containers, distributed throughout the municipal health system. Also, face shields are being produced by 3D printers on Belém campus to be distributed to hospitals.

This action by Belém campus has also been extended to the municipality of Marituba, in the Metropolitan Area of Belém. The Health Department of Marituba received 72 liters of 70% alcohol solution, and 65 protective face shields. The initiative is yet another result of the Action Plan developed by the Coronavirus Prevention Special Group, created on Belém campus to face the pandemic.

In Tucuruí, similar work is also being done. There, IFPA has joined forces with the Universidade Federal do Pará (UFPA) to use 3D printers to manufacture acetate face shields that will be donated to hospitals and health facilities in the area. There are two 3D printers, one loaned by IFPA Tucuruí campus, and another one loaned by UFPA. The printing capacity of both machines combined is ten masks per day. The project uses biodegradable, non-disposable polymers, and has already distributed more than 300 face shields to ten surrounding municipalities.


Itaituba Campus, together with the City Government, is producing hand sanitizer to meet the demand of the Municipal Health Secretariat of Itaituba (Semsas). For that purpose, the



campus relies on its Chemistry laboratory, glassware for handling reagents and chemical solutions, laboratory sterilizers, individual and collective protection equipment, as well as qualified technical staff. Hand sanitizer is also being produced by Santarém Campus. There, the Municipal Health Secretariat has provided the campus with 96% alcohol solution, so that it could be diluted into a 70% concentration. Abaetetuba campus has also joined this effort, and has already delivered 30 liters of glycerin alcohol to health units in the municipality.

The actions carried out by the campuses go far beyond the production of personal protective equipment (PPE). For example, Vigia branch campus, in partnership with IFPA in Castanhal, has developed an application to map Covid-19 cases in Pará (<http://alertapara.net.br/>). The application surveys and points out, interactively, the locations with confirmed cases in the state. It also uses Artificial Intelligence to predict new cases.

IFPA's actions are not only focused on the state capital, which emphasizes the institution's capillarity. "One of IFPA's main characteristics is its closeness to the areas where the campuses are located, and not only in the host cities themselves, but also neighboring localities. We have 18 campuses, and we intend to use this network to serve the community throughout the entire state. Therefore, the Institute plays a decisive and fundamental role in supporting society while fighting this pandemic", said the rector.



In addition to preventive actions, and the production of tools to fight the pandemic, IFPA is also concerned with the mental health of its student and staff bodies. Therefore, the institute is offering a series of informative materials on Mental Health and well-being to its community, as well as “Virtual Psychological Counselling,” a free space for mass scale psychological support during the period of interrupted academic activities. Those are only the first steps taken by the Institute, showing that it is concerned with everyone’s quality of life.

Source:

[Communication Department of the Instituto Federal do Pará \(IFPA\)](#)



## INSTITUTO FEDERAL DE RONDÔNIA - IFRO


### **IFRO provides buses and fuel to Rondônia students repatriation**

Buses from Colorado do Oeste and Vilhena campuses of the Instituto Federal de Rondônia (IFRO) were borrowed for the repatriation of students from the state of Rondonia living in Bolivia. Vehicles from Ji-Paraná and Porto Velho Calama campuses will be used next. They will be leaving on April 15th to bring back students living in Paraguay.

That is a coordinated action between the State Health Surveillance Agency (*Agevisa*), the State Secretariat for Security, Defense and Citizenship (*Sesdec*), Civil Defense of the Military Fire Brigade (*CBMRO*), regional administrations of the State Health Secretariat (*Sesau*, in Portuguese), Municipal Surveillance, Rondônia's Autarchy for Technical Assistance and Rural Extension (*Emater*), the Federal Highway Police (*PRF*) and IFRO.

The institute provides logistical support, buses, fuel, and, in the case of Vilhena Campus, professional drivers are also contributing to making it possible to bring students home.

According to the State Government, 159 students from Rondônia living in Cochabamba and Santa Cruz de La Sierra (Bolivia) have been already repatriated. Because classes are suspended, and




neighboring countries have closed their borders and suspended flights, Brazilian students also had support from the Mato Grosso do Sul Military Fire Brigade (*CBMMS*) both in Campo Grande and Corumbá cities, as well as from the Mato Grosso Military Fire Brigade (*CBMMT*) in Cuiabá city.

“This pandemic allows us to reflect on our actions, and in what society expects from an educational institution. In addition to offering public and free-of-charge quality education, what we can do is to set an example. Public and private institutions can collaborate with the fight against Covid-19 regardless of the area of activity. Our human resources and physical and technological structure are available for whatever is necessary, because this is a moment to join forces. In times like these, of anguish and uncertainty, what we want most is to be close to our families, and knowing that IFRO can help students return home is very gratifying,” evaluates Aremilson Elias de Oliveira, director of Vilhena Campus,

On their first trip, the buses brought back 72 students. Colorado do Oeste Campus’ bus arrived in Campo Grande, at 10 pm on April 10th, and on April 12th, at 7 pm, it had arrived in Porto Velho. In addition to Porto Velho, some students disembarked in other cities, such as Pimenta Bueno, Cacoal, Ji-Paraná, Jarú, and Ariquemes.

According to Marcos Aurélio Anequine de Macedo, director of Colorado do Oeste campus, they were answering the request that the Fire Department made through the Brazilian Consulate: “Citizens



from Rondônia who study in Bolivia and who need to return to the state, that is, a legal repatriation through the Brazilian Consulate”.

Four firefighters accompanied the students in the IFRO buses to observe safety measures and adequate procedures and to ensure their return to the state.


### ***Paraguay***

In the next mission, called “Repatriates 6”, two other buses will leave from Ponta Porã city (MS), which borders Pedro Juan Caballero (Paraguay), to bring 166 repatriated students to Rondônia. The buses provided by IFRO will be from Ji-Paraná and Porto Velho Calama campuses.

According to Leonardo Leocádio, director of Porto Velho Calama campus, the institution “demonstrates, once again, its commitment to society, by taking part in this important humanitarian action. We offer our resources to attend any needs our community might have. We are partners and our spirit is always to serve. We are happy and proud to do so.”

Letícia Carvalho Pivetta, director of Ji-Paraná campus, added that IFRO “is always willing, as far as possible, to contribute to society. During this pandemic, it is very important to support families from Rondonia, and we will do everything within our reach to help.”





IFRO's buses are borrowed according to the Military Fire Brigade demands, which take into consideration the Brazilian public health conditions concerning the Covid-19 pandemic, as well as the situation of students who require legal repatriation. Corumbá and Ponta Porã, the cities where students are boarding, are also health surveillance barriers on the border.

Source:


[Communication Department of the Instituto Federal de Rondônia \(IFRO\)](#)

### **Instituto Federal de Roraima starts production of hand sanitizer**

On April 14th, the Instituto Federal de Roraima (IFRR) started a small-scale production of hand sanitizer in the Chemistry laboratory of Boa Vista Zona Oeste campus (CBVZO), located in Laura Moreira neighborhood, capital of Roraima. The activity has engaged professionals from different campuses of the institution, more specifically eight Chemistry and Pharmacy professors, all of them masters and doctoral degree holders, as well as one laboratory technician, and two collaborating professors from the Universidade Federal de Roraima (UFRR).

For this project, the members of the IFRR Crisis Committee to Confront the Coronavirus (CCEC) has donated 65 liters of alcohol 70% to be transformed into hand sanitizer. The carbomer, used as a thickener, as well as the triethanolamine, used as a pH balancer, were donated by Professor Leovergildo Farias, the responsible for this experimental production.


Initially, the product will be destined to IFRR campuses' use. The institution is committed to the acquisition of more supplies to continue the production of this antiseptic on a larger scale to also distribute it to the civil servants attending the local population, thus



playing its social role in face of the scarcity of hand sanitizers in the local market. However, for the external community to have access to the product, it must comply with all Brazilian Health Regulatory Agency (Anvisa) requirements, and authorization from the state health surveillance is still pending.

Through an online interview, Professor Renara Morais, who is part of the team, talked about the meticulousness in the product development: “To prepare the product, we have adopted extraordinary and temporary criteria and procedures that were put in place by Resolution 347/2020 and 350/2020 to answer the public health emergency, and other technical standards enforced by Anvisa, as well as the Brazilian Pharmacopoeia National Form. What we want is to apply our technical-scientific knowledge to stop the spread of coronavirus”, she commented. The professor has also highlighted the thoroughness involved in the entire process to maintain the quality after the product preparation, from fractionating it into sterile packaging to labeling with the necessary technical information.

Professor Morais has also taken the opportunity to warn us not to try to produce hand sanitizers at home. She has clarified that “it is not just a mixture of reagents; there are scientific knowledge and a technical and sterile environment for this type of production.” To exemplify a type of ineffective and dangerous experience, she said that there are people who mix hair gel with liquid alcohol. According



to her, this combination has no effectiveness in exterminating microorganisms, making individuals even more exposed to contamination. “Homemade recipes do not guarantee the production of sanitizers with the appropriate concentration for the correct disinfection of the hands, and may even enhance the contamination and proliferation of microorganisms on the skin,” she added.

Furthermore, the professor talked about some other perspectives of IFRR. “In addition to the production of hand sanitizer, our institution intends to start producing soap to be donated to vulnerable communities,” she said. However, according to her, it depends on resources and legal authorization to purchase reagents under the control of the Federal Police. “This procedure has already been done with undergraduate programs, even before this pandemic, and we hope it might be possible to repeat it to further contribute to the non-dissemination of the Coronavirus,” she declared.

List of professionals involved in this project: Professor Cintiará Maia (IFRR/CBV) Professor Cristiane Oliveira (IFRR/CBV) Professor Francisco Panero (UFRR) Professor Ivana Marques (IFRR/CNP) Professor João Panero (IFRR/CBV) Professor Jonierison Pontis (IFRR/CBVZO) Professor Jordana Riss (IFRR/CNP) Professor Leovergildo Farias (IFRR/CBV) Professor Mirla Cidade (UFRR) Professor Renara Morais (IFRR/CNP) Technician Gabriel Gomes (IFRR/CBVZO) Text: Sofia Lampert.

Source:

[Communication Department of Instituto Federal de Roraima \(IFRR\)](#)



## INSTITUTO FEDERAL DE TOCANTINS - IFTO

### **Public call selects IFTO's first project to combat Coronavirus**

To support the fight against Coronavirus (Covid-19) and find solutions to the problem, the Instituto Federal of Tocantins (IFTO) organized a public call to select up to 10 projects. Submissions are being received in continuous flow via the Unified Public Administration System (SUAP).

Professor Jonierson Cruz from Araguaína Campus is leading the first proposal approved on the selection. The project consists of using 3D print technology to manufacture, by the end of August, approximately 300 face shield masks, that will be donated to hospitals in Tocantins that are engaged in the fight against the Coronavirus pandemic.

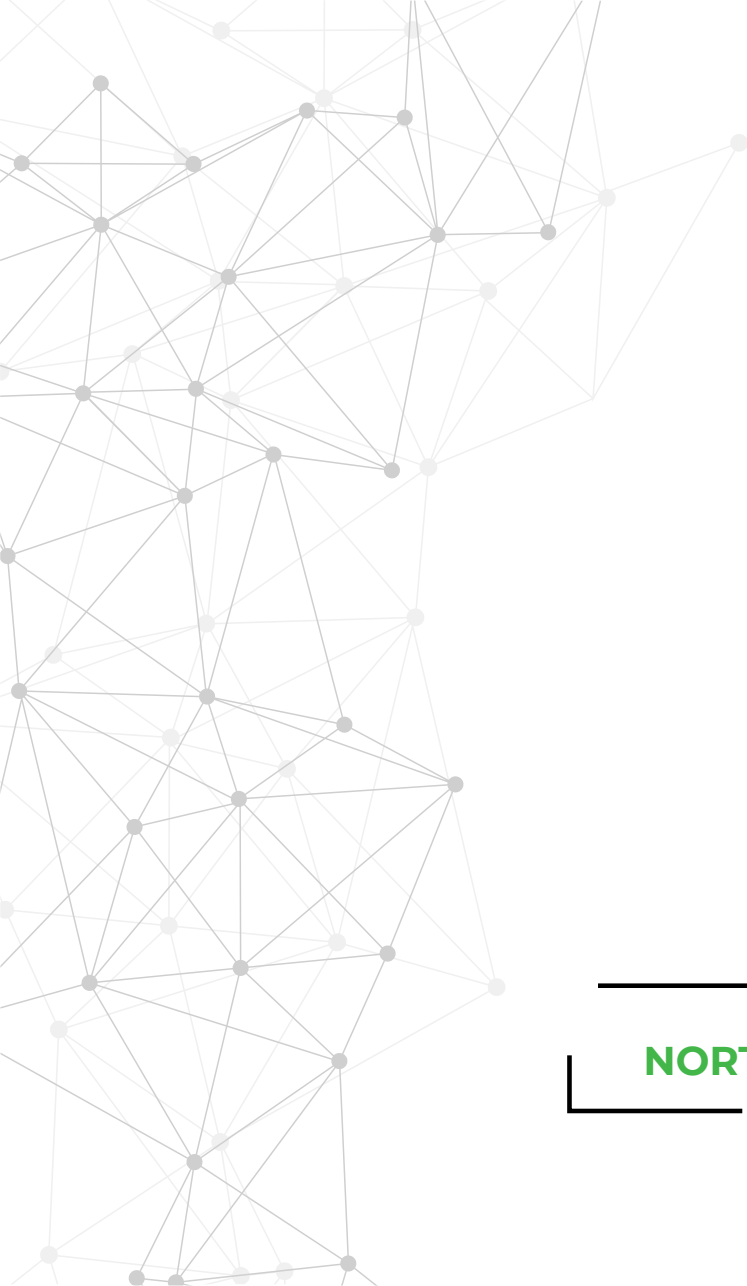
According to professor Jonierson Cruz, the public call “is an important initiative in the battle against the current crisis. We know that there are excellent professionals in our institution. However, logistic and financial support to research is essential to make ideas come true.”

Professors Walmir Sousa and Katiane Braga have also teamed up to collaborate with the project, as well as some members of Taurusbot, a Robotics club formed by students who are attending

the Vocational Program in Information Technology integrated to High School in Araguaína campus.

Source:

[Communication Department of the Instituto Federal de Tocantins \(IFTO\)](#)



**NORTHEASTERN REGION**


### **Ifal and Ufal have set up a task force to produce 70% isopropyl alcohol**

Professors from different campuses at the Instituto Federal de Alagoas (Ifal) are working in relays to produce 70% isopropyl alcohol, in liquid and gel versions, and sodium hypochlorite 1%, used as sanitizing agents against coronavirus. The work has been carried out in the laboratories of the Institute of Chemistry and Biotechnology (IQB) of the Universidade Federal de Alagoas (Ufal).

The production started on March 31, as a result of the initiative of IFAL professors in collaborating with the task force led by Ufal in partnership with representatives of civil society and businessmen from Alagoas. The general action aims to benefit Professor Alberto Antunes University Hospital (HU) and other institutions, collecting and producing essential hygiene items to combat the virus that causes Covid-19, a disease that has been impacting the world in unprecedented ways over the past couple of months.

The partnership between the two educational institutions was established on March 30, after a meeting with all sectors involved. “At Ufal, there is a work and logistics structure fully set up, with the engagement of volunteers from the university (professors and





students) and civil society people with knowledge in chemistry. Furthermore, what makes the task more tangible is the contribution offered by companies from the sugar and alcohol, plastic and cleaning materials industries, providing the necessary inputs to carry out this important initiative that is deeply committed to the greater good: the population of Alagoas”, informed Professor Demetrius Pereira Morilla, from Campus Maceió, adding that the structure and organization have motivated IFAL professors to collaborate in it.

After visiting IQB, the group did not hesitate to join Ufal in the production that was already underway. “As soon as we noticed that the university needed to enlarge their team, we concluded that, at this moment, joining them would be the best way to have an optimized and larger scale work”, reported Professor Luís Carlos Ferreira de Oliveira, from Campus Marechal Deodoro.

Overall, the Ifal team is made of up 11 professors from the following campuses: Maceió, Marechal Deodoro, Murici, and Penedo (check all the names in the list below). In addition to the qualified workforce, IFAL will provide inputs and equipment. The partnership has the support of IFAL Pro-Rector of Research, Postgraduate and Innovation and also includes: a vehicle at the disposal of the group, the possibility of using IFAL laboratories to carry out quality control tests”, and the search for partnerships with companies from Alagoas in order to acquire extra materials and services.

“Ifal and Ufal are two public institutions of teaching and scientific knowledge production together, with the same objective,

and the positive impact of this union is, undoubtedly, much greater than if they were working towards the same cause, but separately”, concluded the pro-rector Eunice Palmeira, also highlighting as one of the benefits of this partnership the multi campus interaction among Ifal’s servants

On the afternoon of April 1st, the group delivered 100 liters of 70% isopropyl alcohol and 150 liters of sodium hypochlorite 1% to Hospital Vicentino de Paula, in the town of União dos Palmares.

Professors involved in the initiative

- Alan John Duarte de Freitas (Ifal Maceió)
- Cleylton Bezerra Lopes (Ifal Maceió)
- Demetrius Pereira Morilla (Ifal Maceió)
- Eduardo Lima dos Santos (Ifal Maceió)
- Johnnatan Duarte de Freitas (Ifal Maceió)
- Jonas dos Santos Souza (Ifal Maceió)
- José Ailton Cardoso de Barros (Ifal Murici)
- Luís Carlos Ferreira de Oliveira (Ifal Marechal Deodoro)
- Mikael de Lima Freitas (Ifal Maceió)
- Mirelle Márcio Santos Cabral (Ifal Penedo)
- Víctor Hugo Oliveira de Andrade (Ifal Murici)

Source:

[Communication Department of Instituto Federal de Alagoas \(IFAL\)](#)




## INSTITUTO FEDERAL DA BAHIA - IFBA

### **IFBA joins technology with volunteering in actions to fight Covid-19**


The Instituto Federal da Bahia (IFBA) has used its technological expertise to develop actions to fight Covid-19, caused by the new coronavirus. Along with four other institutions, IFBA is producing face Shields through 3D printing that will be donated to health professionals in Salvador and Lauro de Freitas. The voluntary action is developed by a group of researchers and “makers” – a term used to define professionals who create or produce products on their own – and aims to assist professionals in preventing the risk of infection by the virus.

The Personal Protective Equipment (PPE) for the face is a complement to the commonly used N95 masks, and works as a protection for the eye region, which is unprotected when the professional uses only the common mask. The first 200 units were delivered to the Couto Maia Institute this week. Another 700 are ready and will be sent to the Health Department of the State of Bahia (Sesab), so that it can be distributed to other health units that require them.



The project, called “Face shield for life 3D”, is carried out by researchers from the IFBA, the Bahiana School of Medicine and Public Health, the State University of Bahia (Uneb), the Federal University of the West of Bahia (Ufob), from the Youth Center for Science and Culture (CJCC) and has the support of the Secretariat of Science, Technology and Innovation of the State of Bahia (Secti). The work is carried out by the team, being pieces of equipment manufactured by different institutions and collection, assembly and cleaning done by the Bahiana School of Medicine and Public Health.


IFBA is responsible for the production and 3D printing of two parts of the equipment: the plastic strips, bottom and top, which hold the acetate part of the PPE. The initiative is coordinated by the Pro-Rector for Research, Graduate Studies and Innovation (PRPGI) and by the Salvador Innovation Hub, which is executing, without interruption, the work carried out with the use of PLA, PC and Nylon polymers, of the unit, material that gelon to the institution . The project counts on the leadership of professors Antonio Gabriel Almeida and Allan Edgard Freitas, from Salvador Campus, who have the collaboration of scholarship holders Tamires Pereira, Ciro Fialho, Gessica Souza (from the Master Program in Systems and Products Engineering - PPGESP) and Gabriel Ribeiro (graduate student in Mechanical Industrial Engineering). In total, there are about 30 people involved in the project.



The replacement of the material used in manufacturing will be carried out through contributions over the internet, by using the website “Vakinha”. To reinforce production, the Salvador campus, through the Extension and Community Relations Directorate (Direc), is studying the possibility of incorporating the 3D prototyping machines from the unit to the task force in order to produce more components.

Other IFBA units are also involved in producing face PPE. On Feira de Santana campus, the initiative came from professors in the area of computer science and engineering, among them Professor Fábio Barreto, who is part of a group of researchers, professors and volunteers from the city and region: the CoronaVidas. Fifty face shields are scheduled to be delivered at the Clériston Andrade General Hospital. In the city of Jequié, the initiative is carried out in partnership with other institutions in the region, such as the State University of Southwest Bahia (UESB), and the Municipal Health Department. Initially, 1,000 masks will be produced to cover the demand in the entire region and the surplus will be distributed to health units in other cities. The group is also receiving contributions through the “Vakinha website”.

The dedication of the academic community is highlighted by Antônio Almeida. “It is important to say that the entire IFBA community is involved in this action to fight the new coronavirus. Here at the Innovation Hub, undergraduate and Master’s students are, on their own initiative, at the forefront of equipment production”.



emphasizes the PIS project coordinator. Also according to Almeida, the team is evaluating the possibility of producing other materials to support the combat of Covid-19 and is studying the participation in the public call published by the Foundation for Support Research Support in Bahia (Fapesb) for the development of research on the virus.

Another IFBA initiative that has gained prominence during the pandemic scenario is the creation of maps to visualize the spread of cases in neighborhoods in the capital of Bahia. The project is developed by professors and geographers from the Salvador campus, Nilton Santana, Plínio Falcão and Ricardo Bahia, using the geoprocessing technique, which consists in relating spatial data to information technology, joining the data from the cartographic base of the division of the neighborhoods of the city, the occurrences of Covid-19 and information released by the Municipal Health Secretariat.

“IFBA has faced the Covid-19 problem from several perspectives, whether with institutional prevention norms, aimed at the academic community; or through actions to combat the pandemic. As an institution that produces knowledge, we have participated in collaborative working groups in the search for preventive solutions for the benefit of the population. In addition to the production of face shields masks, we have researchers working on the manufacture of mechanical ventilators fans for ICU beds. In addition, the development of a solidarity network that is able to map people in conditions of vulnerability, due to the pandemic, is

being evaluated so that these people can be assisted through the raising of voluntary funds from various sectors from the organized society”, highlights the Pro-rector for research, postgraduation and innovation, Jancarlos Menezes Lapa.

Source:

[Communication Department of the Instituto Federal da Bahia \(IFBA\)](#)



## INSTITUTO FEDERAL BAIANO - IF BAIANO


### **IF Baiano produces and delivers alcohol 70% to health services in southwestern region of the state**

Last week, the Instituto Federal de Educação, Ciência e Tecnologia Baiano (IF Baiano) delivered 130 liters of liquid hand sanitizer (containing glycerol and ethyl alcohol in a final concentration of 77° GL) to health services in the municipalities of Guanambi and Pindaí, in the southwestern region of the state of Bahia. This hand sanitizer is being produced by students and staff in the laboratories of Guanambi *Campus* of IF Baiano.

This initiative has the support of the city halls of the municipalities involved, through a partnership signed by the *Campus* director, aiming to face the coronavirus pandemic. Ricardo Brandão, coordinator of the production and laboratory technician at the institute, informed: “We have delivered 100 liters to the city hall of Guanambi and 30 liters to the city hall of Pindaí”.

The idea of producing and distributing sanitizer to the health system professionals came from the students of the Chemistry teaching degree program in mid-March. Nowadays, ten people collaborate in the production, among professors, technicians and seven students from the program.





The glycerine-containing ethyl alcohol sanitizer being produced is equivalent to 77°GL alcohol, also called alcohol 70% (w/v), which has the minimum concentration to be considered effective against coronavirus. According to Brandão, the production process is based on the mass concentration of ethyl alcohol, by the use of 96°GL or at higher concentration ethanol. “The process is strictly executed under the exact temperature of 20°C (68°F) and measured with an alcoholmeter”, the public servant explains.

Their intention is to continue the work and to produce another 120 liters of alcohol by this Tuesday, the 7th. “We already have the raw materials and we are waiting for more inputs to increase the production”, he concluded.

Source:

[Communication Department of Instituto Federal Baiano \(IF Baiano\)](#)




## INSTITUTO FEDERAL DO CEARÁ - IFCE

### **“Stay at Home” platform already reaches five states**

*The tool developed by IFCE expands, and can now receive registrations from traders across the country*

Several states are beginning to adopt the “Stay at Home” platform, which has been developed by researchers and students from the Instituto Federal do Ceará (IFCE) in order to map trades and services, by helping entrepreneurs in the midst of the Covid-19 pandemic. The service has been expanded, and is now being used by businesses in five states.

The State Government of Bahia was the first one to show interest in the tool’s potential outside the State of Ceará. The teams from the Secretariats of Economic Development (SDE), as well as from the Science, Technology, and Innovation (SECTI) from Bahia have contacted IFCE to request the use of the platform, in order to register the businesses that are providing delivery services in the capital city of Salvador, and other cities in the countryside. There are already 205 trades registered on the website, such as: pharmacies, restaurants, pet shops, stationery stores, supermarkets, and many others.



The Secretary of Science, Technology, and Innovation from Bahia, Adélia Pinheiro, has praised the portal created by IFCE. “It is a simple and friendly platform that will help the entire population during this moment of reduced access to products and services. The focus is on small businesses, so that they have greater visibility and, thus, will be able to deliver their products and/or services”, she pointed out.

The State of Rio Grande do Norte is also starting to use the website from Ceará, with two businesses already registered, while the state of Pará has got one. Another one has also been registered in Pernambuco. The State of Ceará had 316 registrations until Tuesday morning (April 14<sup>th</sup>), thus, totaling 525 registered businesses on the portal. The platform is open for registrations from any other Brazilian state.

“We have had more than 5,700 accesses since the platform was launched. The Government of Bahia has been using the “Stay at Home” platform as an official tool to support traders, as well as sharing information with us in order to improve the system”, said Professor Carina Oliveira, the Coordinator of the “Stay at Home” platform, and professor on the IFCE Campus in Aracati.




### ***Map shows part of the expansion of the tool created by IFCE***

The Dean for Research, Graduate Studies, and Innovation of IFCE, Prof. Wally Menezes, has celebrated the expansion of the project. “This action shows the availability of IFCE, and the network of Federal Institutes to share their solutions” once again. The portal has also given rise to an App, which will be available soon on the Android and iOS platforms, and we are just waiting for Google and Apple to display the initiative from Ceará in their app stores.

### ***Development in record time***

The “Stay at Home” platform was developed through the laboratories of Computer Networks (LAR), and Technological Innovation (LIT), on the IFCE campuses in the cities of Aracati and Fortaleza respectively. It is an online solution to provide the population with information about commercial enterprises and providers of essential services in the State of Ceará.

The system was developed in a very short time, given the urgency of the demand. The team, made up of professors and training students, working on a voluntary basis, took only 3 days to complete the first version of the portal.



The “Stay at Home” tool is distinguished by allowing the entrepreneur to be registered in the platform in a less bureaucratic way. All negotiation is carried out between the customer and the trader, and there is no interference on the part of the tool. The objective is to provide visibility, and connect consumers with the small and medium-sized trades and services in each region, who are the most affected by this crisis caused by the pandemic.

Source:

[Rectory of the Instituto Federal do Ceará \(IFCE\), with information from the State Government of Bahia](#)




## INSTITUTO FEDERAL DO MARANHÃO - IFMA

### **Innovation Factory and Monte Castelo Campus join efforts in fighting Covid-19**

*Based on innovation and solidarity, students, professors and staff design equipment to support health professionals*

Considering we have been facing the most serious public health threat of our times, groups of researchers from the Instituto Federal do Maranhão (IFMA) Campus São Luís-Monte Castelo, and from the strategic Innovation Factory (Fábrica de Inovação) project have joined in an effort to produce equipment, especially face shields. The shields are distributed to professionals who assist people affected by Covid-19. The actions are carried out in partnership with the “Makers MA against Covid-19” group, and with the support from other institutions. Similar initiatives are also being developed on other IFMA campuses, such as Caxias, São João dos Patos and Imperatriz.

In april, 15 face shields were delivered by the IFMA Innovation Factory to the Maternal and Child Unit of the University Hospital, where a six-member team has been working on the production of these items since March 30 –Natilene Mesquita, who is the IFMA Pro-Rector for Research, Post-Graduation and Innovation; Daniel



Lima Gomes Junior, IFMA Innovation Agency Director; Cláudio Brito, designer; Ligia Cristina Ferreira Costa, IFMA Research Director, and professors Eveline Sá and Ádilla Marvão, from São Luís-Monte Castelo Campus. Professors Mauro Lopes, Cláudia Paixão, and the enthusiastic systems analyst, Dilson José Lins Rabelo Junior, are also taking part in this initiative.

Daniel Gomes explains that in the first week, they had to work on the printer settings. “A member of the team sent us a message telling us that other institutions were producing face shields, so we ended up making an effort in order to use IFMA’s printers to assist in the production. We received the models and coordinates from our Makers’ team. But we only managed to produce the first face shield the following week. The 3D model was shared. “A model already validated by nurses and doctors”, according to the Innovation director, who explains that anyone with a 3D printer at home can contribute to the manufacturing of face shields, even if they have faced an initial difficulty in making the necessary adjustments for production.

Since then, a rotational working routine was set in order to avoid overcrowding. “The printer we use belongs to the Monte Castelo Campus Innovation Factory. But we placed it in a bigger room to keep some distance between the team members. There is a labor sharing. While someone is printing the mask, another person is assembling it, by cutting the acetate and sanding the material that comes out of the printer, to finish it. As it is made of

plastic, sometimes there is a tip that can hurt the equipment user”, said Daniel Gomes.

The printer used by the team is capable of producing up to five masks in three and a half hours. With this pace of work, they have already managed to meet the demands of the Maternal and Child University Hospital, and some Emergency Care Units (UPAs). Also on the list, there are requests from the Fire Department, First Aid Stations I and II, besides the demands from the State Department of Science, Technology and Innovation (SECTI), through the Makers project.

Requests for the printing of protective masks by institutions involved with fighting the disease can be requested by the following e-mail: [fabrica@ifma.edu.br](mailto:fabrica@ifma.edu.br)

Former IFMA student and one of the coordinators of the project “Makers MA against Covid-19”, Jessica Almeida dos Santos, explains that the group has the support from SECTI, and works on four production lines - face shields; masks equivalent to N95 (model indicated for protection against the virus), in the testing and validation phase; automation of ambu (a device used to ventilate patients), and construction of a mechanical ventilator (still in the design phase). There are 10 direct organizers, around 40 people printing at home offices, and 80 more involved in total. There are also 15 partner institutions, such as IFMA, and other public and private educational institutions.



### ***Assigned material***

At least four IFMA printers are, so far, mapped by the group to meet the requested demands, in São Luís and also in the country towns. There are also several professors and students from the educational institutions involved. Among them, Kaio Lourenço Teixeira Barbosa, a mechanical engineer from IFMA, and currently, a student in the Postgraduate Program on Mechanical Engineering, also within IFMA. He explains that he has joined the production team by observing the example of other people who had worked hard to collaborate. For him, the feeling before the pandemic, and the work carried out is “fearful, but also of solidarity, because we can help who really matters most at this moment, the health professionals”.

The master’s student states that he is now producing the material by himself with an IFMA 3D printer. He works on printing the shields from 8 a.m. to 6 p.m. daily. Until May 9, he had produced 48 face shields. “It’s a small number, because 3D printing is a time-consuming process. That is why this union, this movement, is important in order to serve as many hospitals as possible”, he highlights.

Professor Washington Luis Santos Silva, the Infrastructure and Technology Director on the IFMA São Luís-Monte Castelo Campus, explains that besides providing printers to the Makers project, the campus has also lent a compressor and hydraulic and pneumatic valves from its laboratories, material to be used in the development



of mechanical ventilators. Student Renata Thaira Ferreira Pereira, and professor Arnaldo Pinheiro de Azevedo Junior, who has also lent a printer and donated filament, are part of the IFMA team who is working on the production with Makers.

Cláudio Leão Torres, the Director General of São Luís-Monte Castelo Campus, highlights the importance of such initiative. “The Campus has demonstrated, through our teacher-researchers and students, the initiative to participate in actions that have been proven to be successful in facing Covid-19”, he said.

Source:

[Communication Department of the Instituto Federal do Maranhão \(IFMA\)](#)


### **IFPB contributes with prevention actions to fight against the coronavirus pandemic**

*Through the use of science and technology, several actions have been taken to reduce the crisis*

Prevention measures against the contagion of Covid-19 and actions to fight against the effects caused by the pandemic on society have been one of the main concerns of the Instituto Federal da Paraíba (IFPB) during the quarantine.

According to the Rector of IFPB, Nicácio Lopes, with these actions, IFPB fulfills its role of social responsibility by making use of its technological vocation to meet the demands of society in combating the harmful effects of the pandemic, as well as to promote actions which aim at preventing Covid-19. “We are facing a difficult moment characterized by the coronavirus pandemic. We have taken measures aiming at the preservation of community health and of human life, and we are offering actions and contributions to reduce the spread of the virus”, said the Rector.

Focus on prevention - Among the actions to prevent the spread of the disease are the production of face shields and




cleaning and personal hygiene materials that are distributed to the public health network weekly. About 1,800 face shields have already been produced until April 24 and 1,649 have been donated. Six municipalities have been awarded with this project: Itabaiana, João Pessoa, Patos, Mamanguape, Quixabá and Monteiro. It is a voluntary initiative by teachers, students and institutional partners.

“With these actions, the campus has been fulfilling its role as an institution, with

social responsibility, helping local authorities to fight against the pandemic. We have the moral duty to support those on the frontlines”, said the Director of Patos Campus, Ronaldo de Lima. This campus together with the Innovation Center, João Pessoa Campus and Monteiro Campus integrate the IFPB network of 3D printing.

“The Center tries to face the current situation of Covid-19. Together with other campuses and using the IFPB 3D printings, we can significantly contribute to the production of Personal Protective Equipment (PPE)”, highlighted the Director of the Innovation Center Damires Souza, who signed a partnership with the Center for Strategic Health Technologies (NUTES) at the State University of Paraíba (UEPB) to produce face shields.

The production of personal hygiene items, including hand sanitizer, was initiated by Cabedelo and Campina Grande campuses in their labs of the Technical Program in Chemistry.




Campina Campus has already donated 50 liters of hand sanitizer to the needy community in the city. The item has been produced in the labs of the Technical program in Chemistry using the stock from the Institution destined to its practical chemistry classes. Cabedelo Campus has been producing the items with the help of supply donations. The IFPB waits for the release of funds from SETEC to start the production in larger quantities.

“We have produced 90 liters of liquid soap and detergent and we hope to complete the production of an initial quantity of 100 liters of hand sanitiser 70% until Wednesday, April 29. This work has been possible due to donations that allowed the start of execution, but we have been waiting for government resources from SETEC to continue the project”, said the Director of Cabedelo Campus Lício Costa.

There are also other actions originated from student initiatives such as the creation of the “Covid-19: Public Utility” application, which sends real news about the pandemic and another application called “Não Aglomere” (Do not Gather in Groups) to control the movement of people in commercial properties that remain open. Educational materials have been produced by the campuses’ social communication teams and disseminated through social networks.


Focus on combating the effects - Regarding to the perspective of combating the psychological effects caused by the social distancing of the population, a group of professionals in the



psychology area of the IFPB created the virtual group “Há Braços” (There are Arms). The network aims to provide emotional support to students through a group on the Whatsapp application and an Instagram profile, where chats take place through Lives in which professionals send words of encouragement and motivation. For those who are in poor mental health, suffering from anxiety, panic attacks and other illnesses, there are also online services through Information and Communication Technologies, carried out weekly. This service has already received more than 100 calls.

“The intention of this project is precisely to provide support, guidance on how to act in this scenario, help in a situation of anxiety, panic, among other problems that may happen due to the isolation and fear of the virus. Therefore, part of the IFPB psychologists in partnership with the Student Affairs Office have decided to welcome students aiming at the prevention and promotion of mental health”, said the psychologist and PRAE Assistant, Ana Carolina Simões.

The Pro-rector for Student Affairs, Manoel Macedo, considers that in view of the scenario of uncertainty and difficulties that the world has been going through, many students have been facing situations of stress, anxiety and depression. “This initiative aims to establish a dialogue with students, using electronic tools, to provide emotional support and help them in this delicate moment. Those involved in this project have been making students feel supported and having all the necessary help from an emotional point of view”, said Professor Macedo.




And the actions do not stop. Two research and extension public calls are open for registration to prospect projects for civil servants and students aimed at fighting against the pandemic and reducing its effects, with the possibility of internal and external funding.

The Pro-rectorate for Research, Innovation and Graduation Studies Office has recently published a questionnaire for prospecting proposals, and several highly relevant ideas from IFPB researchers were sent. Two of these ideas were selected together with the IFPB Crisis Committee, to be submitted to the CONIF Public Call, representing the IFPB. In addition to those, two more proposals were submitted to the Extension and Culture Office. The other proposals, as well as the other ideas, can be submitted, informed Silvana Cunha, Pro-Rector of Research, Innovation and Graduate Studies.

The Innovation Center in partnership with EMBRAPII is also prospecting projects based on solutions that can reduce the impacts caused by the Coronavirus

pandemic. The new technologies may contribute to the treatment, diagnosis and monitoring of Covid-19. In total, an investment of 6 million reais will be sponsored by EMBRAPII.

Solidarity – The most recent action of the Institute is called “IFPB Solidário” (Solidarity IFPB), a campaign which aims to raise funds for the purchase and donation of food to meet the basic needs of people in situation of social vulnerability in Paraíba. The action, published on Monday (27), was thought in partnership with the IFPB Support



Foundation (FUNETEC), Civil Servants Association of Federal Institute (ASSIF), Union of Workers of Basic, Professional and Technological Education of Paraíba (SINTEF-PB), SICOOB Bank, Association of Technical Councils and Central Directory of Students (DCE).

Source:

[Communication Department of the Instituto Federal da Paraíba \(IFPB\)](#)





## INSTITUTO FEDERAL DE PERNAMBUCO - IFPE

### **IFPE promotes actions in response to Covid-19**

*Institution donates personal protective equipment (PPE) and establishes Covid-19 Crisis Management Committee*

The Instituto Federal de Educação, Ciência e Tecnologia de Pernambuco (IFPE), through several Campuses has been promoting several actions to help fight Covid-19 pandemic.

IFPE at Pesqueira – has joined the City Hall of Pesqueira and other institutions for protection initiatives for the community, donating PPE to the healthcare workers of the Doutor Lídio Paraíba Hospital. The total amount of materials donated surpasses 12.000 items, such as caps, procedure gloves and sterilized gloves, masks, disposable sneakers and aprons are included. The material would be used by nursing students for practical activities and by the dental clinic of the campus.

The Campus is also a member of the Covid-19 crisis management committee, created by the City Hall of Pesqueira to prevent and control the disease. Some of the key activities developed by the campus faculty members are the training of healthcare workers and the advice on the setting up of insulation beds for Covid-19.


### ***IFPE at Abreu e Lima***

Donated PPE to the Secretary of Health of the city of Abreu e Lima. 1.500 pairs of gloves, 1.500 disposable masks and 600 disposable caps were donated altogether. These PPE kits have been made available for the use of front line workers, such as nurses, nursing technicians, doctors, among others.

IFPE at Abreu e Lima has also launched a solidarity campaign to collect food and cleaning material in order to help families in situations of social vulnerability. Donations can be made in the main entrance of the campus, located behind the city Public Market, from 8 a.m. to 6 p.m. The actions are part of the Covid-19 Crisis Management Committee work in partnership with the local Committee.

### ***IFPE at Recife***


A team of faculty members and students from the Mechanical Engineering Department have made face shields to be donated to the State healthcare units. The group's goal is to manufacture 700 face shields, which will initially be distributed among public hospitals and Emergency Care Units. Currently, there are 6 3D printers available in the campus so that they can make, on average, twenty masks per day.



The Project is coordinated by the professors Héber Silva, Ângelo Costa, Fred Duarte and Jacek Stanislaw, and the students Fernanda Oliveira, Edilson Silva and Mineu Nascimento. To increase production and benefit as many professionals as possible the group, which had three 3D printers, was able to obtain financial resources through online donation to buy one more printer and to buy the materials needed for the creation of the frame, the goggles and also the rubber bands and sanitized bags. One of the two 3D Printers came from the IDV Institute, which supports extension projects with social impact. Besides, the NGO Enable, responsible for creating prosthesis for people with special needs, donated filament rolls (raw material for masks). The group got their inspiration from a model of the facial PPE available on the organization's website.

Some institutions benefited from the initiative: Hospital da Restauração, Military Police Hospital, Municipal Hospital Aristeu Chaves, in Camaragibe, Health Department, in Santa Cruz do Capibaribe, Healthcare Unit of Family II, in Santo Amaro neighborhood and UPA Dra Zilda Arns, in Ibura. Throughout the project, other healthcare centers may benefit.

Another campus action was made by the professors from the Industrial Chemistry Program aligned with the campus General Manager. They donated 80% of their amount of PPE (gloves, face masks and disposable aprons), representing a total of 70.000 items. The donation was shared between Hospital das Clínicas and Health Surveillance of Recife.




The Industrial Chemistry faculty have been also donating, on a daily basis, distilled water to the Federal University of Pernambuco (UFPE) dedicated to the production of IPA by the Department of Pharmaceutical Sciences. It was also proposed by the chemistry faculty, the alternative production of 80% glycerin alcohol, based on the Brazilian Pharmacopeia National Form, due to the lack of the main component of the gel, which is Carbopol.

### ***IFPE at Palmares***

Staff and faculty made a campaign to bring food and hygiene products to low-income students. After a monitoring took place, they learned that some students could not stay home since they had to leave their homes to work for supporting their families. Thanks to personal contributions, 45 kits were made available in the first week of April.

### ***IFPE at Belo Jardim***

950 PPE items were donated to the City Hospital of Belo Jardim. Gloves, masks and aprons were provided to assist health care workers during this time of shortage of products all around



the world. The PPE items were acquired for the internship activities of the Technical Nursing Program and now will help the frontline healthcare workers in Belo Jardim and surroundings

The Campus manager and staff also organized a campaign to collect food and cleaning supplies that will be donated to low-income families in the region.

In addition, the faculty of the technical program in Agroindustry produced detergents, with campus resources and of their own.

### ***IFPE at Caruaru***

The campus is part of Transforma Caruaru project, a solidarity network created to help people affected by social isolation. Caruaru campus raised funds to purchase basic food baskets and hygiene kits among its staff and faculty members. The first delivery was made on April 3th, with 41 basic food baskets and 20 pieces of clothing. All the material was taken to the City Hall building and will be sent to low-income people. The campus is also a donation point for baskets and kits, entrance hall, from 8 am to 5 pm.

### ***IFPE at Igarassu***

On April 24th, Covid-19 Risk Management Committee of the campus distributed 33 basic food baskets to residents of the cities of Igarassu, Itapissuma, Itamaracá, Araçoiaba, Abreu e Lima and Recife. There were 26 food and cleaning kits for campus low-income students. More than three food baskets were delivered to students' relatives. Igarçuara Collective Network and Jesus de Nazaré Nursing Home received two kits each. To make the solidarity action feasible, the campus staff and faculty carried out a campaign to raise funds in favor of donations. The initiative is part of the campus Covid-19, Risk Management Committee coordinated by the Director General of Igarassu campus, James Lima. The Student Assistance department of the campus coordinated a survey to identify people who would receive donations from that first campaign.

Representing the Internal Commission, as well as the other members of the IFPE-Igarassu Community, the civil servants Lincon Tavares and Alexandre Magno and Asdrúbal Junior, carried out the purchase, packaging, cleaning and delivery of basic food baskets. As a way of valuing and strengthening local commerce, the purchase of products that were donated was carried out in small commercial establishments in Igarassu city.


Among the actions of COVID-19 Risk Management Committee of IFPE in Igarassu, there is also a solidarity action that distributed

40 liters of IPA, on April 9th, in the following locations: Rede de Coletivos Igarauara (Coletivo Mariu and Coletivo Catuca); Sacred Heart of Jesus Convent; Home Portal da Luz and Home of the Elderly Jesus of Nazareth. The product was donated by Usina São José and the campus provided the packaging, supported by the professionals of the Usina for the proper filling of the material.

Also, in order to promote actions that minimize the negative effects caused by the pandemic, Social Care Department in IFPE at Igarassu prepared an E-Book (in PDF and video formats), containing the step-by-step instructions for registering in the Federal Government's emergency aid program. The material was produced to assist students whose families were within the profile required to receive the monthly benefit of R\$ 600. The E-Book was distributed through e-mail and WhatsApp.

### ***IFPE at Olinda***

Campus staff, faculty and students, in a volunteer initiative, created the Art for Solidarity campaign. The goal is to exchange artists' pieces from Pernambuco for donations, in cash or basic food baskets, to help the fishing families of Ilha do Maruim, in Olinda, who are having difficulties getting food to their home. Everything is done through social media in the account @arteporsolidariedade,



where there is a gallery with all the donated works. The interested ones choose the desired piece, make the payment or donation of the basket and receive back a voucher, which guarantees the delivery of the pieces at the end of social isolation. There are basic food baskets donation points in the neighborhoods of Boa Viagem and Casa Forte, in Recife, and in Olinda.

Through the channel, artists will also be able to donate pieces of art. There are prints, canvas, ecobags, ceramic pieces and even tattoos. Among the participants, for example, is Mestre Nado, who has worked with Francisco Brennand and Thiago Amorim and produced pieces for bands by artists such as Milton Nascimento, Ney Matogrosso, Antonio Nóbrega, Lula Queiroga and Alceu Valença.

The goal of Arte por Solidariedade is to make fortnightly donations of basic food baskets to the community, where there are 184 families, about 3 thousand people, according to the Fishermen's Association of Ilha do Maruim. A first shipment of supplies - 410 kg of food - has already been donated, on April 9th, after volunteer donations from IFPE- campus Olinda staff, faculty and students.

Source:

[Communication Department of the Instituto Federal de Pernambuco \(IFPE\)](#)



### **A research group at Instituto Federal do Piauí (IFPI) published an international paper on Covid-19 treatment**

A group of researchers at Instituto Federal do Piauí published the paper “Interaction of drugs candidates with various SARS-CoV-2 receptors: an in silico study to combat Covid-19” in the international journal “ChemRxiv”.

The paper is the result of a research conducted at the Information System Research Laboratory (LaPeSi) at the Instituto Federal do Piauí at Central Teresina, using Bioinformatics tools, in order to confirm medications efficacy in the treatment of Covid-19.

The results demonstrated that Metaquine, an antimalaria drug, and Saquinavir, an anti-HIV antiretroviral, present interaction with all studied SARS-CoV-2 receptors, which indicates them as potential candidates for multi-target drugs against Covid-19.

Research participants included Professor Ricardo Ramos, faculty member at Instituto Federal do Piauí at Central Teresina, the Analysis and Development Program (ADS) students, Fábio Júnior and Wildrimak Pereira, staff member at the same campus, Rômulo Barros and the Master’s student in Chemistry Program at Piauí State University, Neiva Oliveira.

[Click here to read the article](#)

Source:

[Communication Department of Instituto Federal do Piauí -IFPI](#)



## INSTITUTO FEDERAL DO RIO GRANDE DO NORTE - IFRN

### **IFRN, UFRN and the State Government join forces to fight Coronavirus**

The Administration for Information Technology Management (DIGTI), together with the Advanced Unit for Technological Innovation (Navi) of the Instituto Federal do Rio Grande do Norte (IFRN) have joined forces with the Laboratory of Technological Innovation (Lais), and the Collective Health Study Group (Nesc) both from the Federal University of Rio Grande do Norte (UFRN) during this pandemic.

Answering to a request made by Rio Grande de Norte's Public Health Department (Sesasp), their goal was to develop a technological ecosystem to strengthen innovative actions that can boost integration between primary care and health surveillance. The result of this task force is the Technological Ecosystem Lais/ Sesasp - Fight against Covid-19.

A booklet was made public and presented the first draft of the Technological Ecosystem that will be available on the Covid-19 Web Portal ([covid19.saude.rn.gov.br](https://covid19.saude.rn.gov.br)) later on.

## ***The Covid-19 Web Portal***


Covid-19 Web Portal is a result of the joint effort of professionals from different areas of expertise, and consists of a set of information systems, which, among other services, gathers data and provides guidelines to society. The online portal will be divided into topics of interest, which are:

Coronavirus RN: It is an information system that gathers data on the spread of Covid-19 from official sources, such as the Federal and State government, and made accessible to the public. It can be accessed through the following link: <https://covid.lais.ufrn.br/>.

Telessaúde/RN: It works as a consultancy providing knowledgeable and science-based opinions provided by healthcare professionals. The service starts on its website on the Covid-19 Web Portal, and might be done even by texting or through webconference.

RegulaRN: By making the Assistance Access Regulation feasible through the National Policy for Regulation, the RegulaRN System aims at organizing and standardizing the flow of admittance to ICU beds in the state, thus promoting transparency, righteousness, and equality in the access to services.

Avasus: The Virtual Learning Environment of the Brazilian Unified National Healthcare System (Avasus) is an online virtual tool whose main objective is educating healthcare workers, managers, and students, as well as the general population in face of the



Coronavirus pandemic. Avasus, for instance, has offered a course on “Emerging respiratory viruses including Covid-19”, which currently has 65 thousand subscribers from Brazil, and another 43 countries.

Situation Room: The situation room is made up of a technical team that monitors hospital beds, respiratory equipment, and Covid-19 occurrences, generating intelligence with a complete and intersectoral vision of the pandemic in the state. The team makes daily analysis and evaluations, based on data gathering, to provide correct and science-based information to healthcare professionals and managers. This effort will allow a better assessment of the situation by region, thus improving the planning and implementation of policies and actions to combat Covid-19.

Vaccination System for Elderly People Living in Housing Complexes: By managing the vaccination against Influenza virus of senior citizens living in horizontal and vertical housing complexes in Natal, the system strives to broaden the immunization coverage and, at the same time, avoid crowding and reduce the overloading of the Healthcare Units from the Primary Healthcare Network. More information is available at: <https://natalvacinacaoidosos.lais.huol.ufrn.br/>.

Volunteer Registry: Through this system, healthcare professionals may volunteer to offer medical teleconsultation on the Covid-19 pandemic to the population.



## *The ecosystem*

According to André Gustavo, IFRN director for Information Technology Management, in response to Sesasp's demand, there is a great number of DIGTI employees working on this endeavor with UFRN. "The rector has understood the importance of this action, and has given us the conditions to engage part of our staff, under the technological leadership of Jailton Paiva, IFRN information technology analyst, in this project," he added.

The technological ecosystem results from the joint effort made by the Executive branch of state and municipal governments, as well as research centers of higher education institutions from Rio Grande do Norte, and the Federal government, through the Brazilian Hospital Services Corporation (Ebserh, in Portuguese). The partnership also counts on the support from the Brazilian Unified National Healthcare System (SUS), Ministry of Health, Natal City Government, IMD, Lacen-RN, IEN, Faceponto, and Houll.

Source:

[Communication Department of the Instituto Federal do Rio Grande do Norte \(IFRN\)](#)



## INSTITUTO FEDERAL DE SERGIPE - IFS


### **IFS distributes thousands of sanitizers and Personal protective equipment (PPE) kits throughout the state of Sergipe**

*Production continues to go full blast and accounts for 2765 face shields, 200 safety goggles, 278 liters of bleach and 32 liters of IPA*

In April 2020, the Instituto Federal de Sergipe (IFS) launched a call to fund projects to combat and prevent Covid-19. However, since mid-March, when this public health emergency arrived in the state and social isolation initiatives were adopted, several faculty and staff members have been joining forces in response to Covid-19 pandemic.

PPE items such as face shields and safety goggles, sanitizers, such as bleach and isopropyl alcohol (IPA) have been made specially to help front line workers. The raw materials needed to manufacture the items came from donations and from other projects already in action at IFS.

The numbers speak for themselves. Adding the results of all the existing production lines at the Institute, 2765 face shields, 200 safety goggles, 278 liters of bleach and 32 liters of IPA have already been distributed. Among the beneficiaries are healthcare




workers from all over the state of Sergipe, who are the focus of the manufacture of protectors and glasses, and needy communities in Aracaju, to whom sanitizers were donated.

“These numbers show that IFS has accomplished its mission not only as an educational institution, but also as a science and technology institution, serving society,” said the chemistry professor at IFS at Estância, Elaine Lima, who is in charge of manufacturing sanitary products with the support of volunteers from the Aracaju, Lagarto, Itabaiana, Tobias Barreto, São Cristóvão and Estância campuses.

### ***Social Impact***

Healthcare workers are a strategic group combating Covid-19 pandemic for, in addition to patient care, they can become the focus of dissemination if they acquire the virus and are not diagnosed early. For this reason, IFS has distributed face shields and safety glasses to hospitals, laboratories and basic healthcare units from north to south of the state. According to Amanda Prata, from the State Health Secretariat, in addition to continuing to supply healthcare units, the secretariat will begin to allocate facial protectors to the Military Police and the Fire Department.

The biomedical scientist Aline Marinho from the Municipal Laboratory of Nossa Senhora do Socorro, says that after she received




the face shield, she has now much power of action when she stays with the patient. “Usually, when we have the blood sample, we are protected with glasses and a mask. However, in these conditions, if the patient coughs or sneezes, we are still exposed. With face shield it is different, because, as they fully cover the face, we feel much safer”, said Aline, who is one of the people responsible for the tests for Covid-19 in the municipality.

The dentist Cinthya Lobo, who works at a Basic Healthcare Unit in the city of Brejo Grande, shares the same opinion. There, despite the normal service has been suspended, the dental service continues to work for urgent cases. “In dental care, exposure is prolonged and, consequently, the risk of contamination increases. In that sense, facial protectors were crucial”, she commented.

In addition to protect healthcare workers, in diseases like COVID-19, it is also strategic to make the population aware of the need for personal hygiene and frequent cleaning of the environments in which they live, since, on some surfaces, the virus can survive for days. However, knowledge becomes insufficient when the necessary products for asepsis are not available. This is the main reason for the production of bleach and IPA.

“This is a time when we need to take care of hygiene. We are a poor community and these products will be of great value”, said Rosana de Jesus, community leader of the Allotment Coqueiral, in Aracaju, upon receiving the donations. The items were delivered to





the State Health Council, which is distributing them to communities and charities in the capital of Sergipe. “This IFS project is essential for lower-income population to clean their homes in the fight against the pandemic,” said Sheyla Andrea, the council’s second vice president.

Source:

[Communication Department of Instituto Federal de Sergipe \(IFS\)](#)



## INSTITUTO FEDERAL DO SERTÃO PERNAMBUCANO - IF SERTÃO-PE

### **Instituto Federal do Sertão Pernambucano makes 70% Isopropyl Alcohol (IPA) donation in response to COVID-19 in the Sertão of Pernambuco State – Brazil**

The Covid-19 pandemic outbreak has fostered actions of union and solidarity around the world. At Instituto Federal do Sertão Pernambucano, in addition to gel alcohol production led by chemistry students in a socio-educational institution in Petrolina, an initiative by the professor Francisco Macedo de Amorim and supported by the Pro-rector of Extension and Culture (Proext) distributed 150 liters of 70% IPA to the Social Development and Human Rights Secretariat of Petrolina (SEDESDH) and 20 liters to Casa Anjo da Guarda, an institution that welcomes children and adolescents at risk or socially vulnerable.

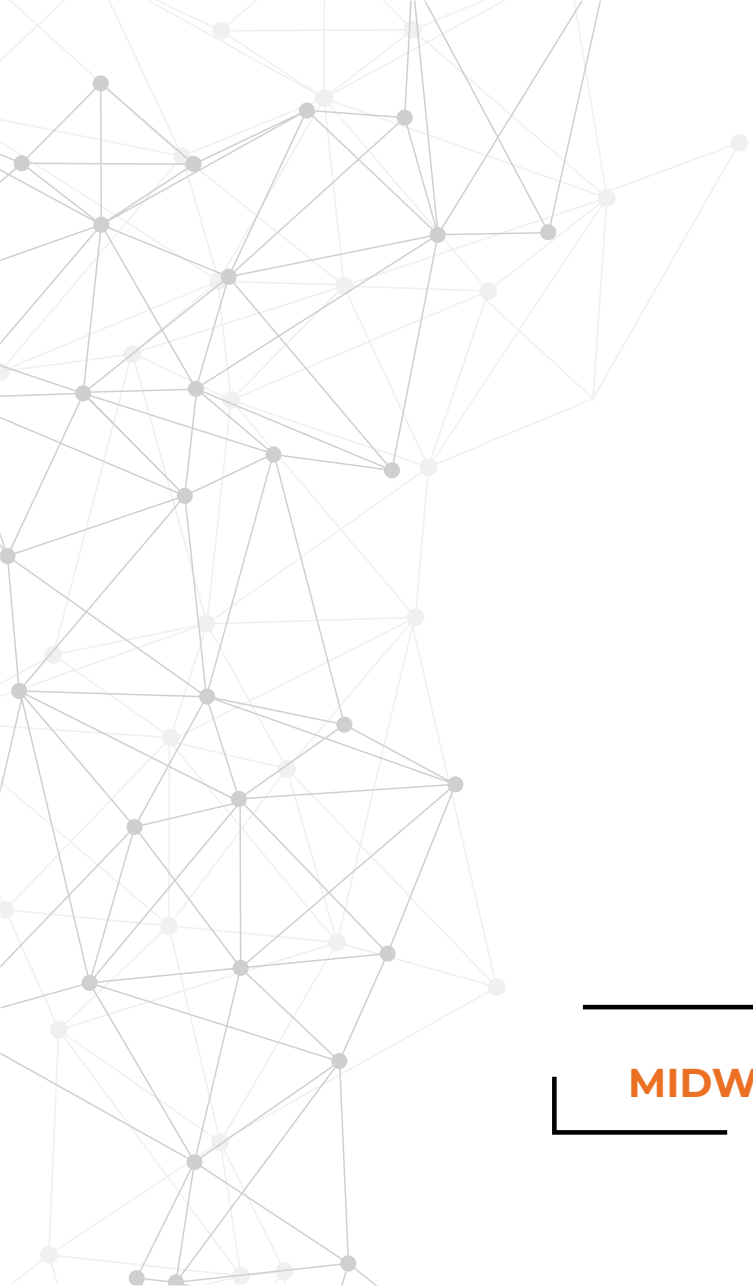
The product, an essential item in the fight against viruses and bacteria present in surfaces and environments, was produced due to a partnership with Terranova and Mandacaru Wineries, which provided 1,000 liters of alcohol. 200 and 500 ml containers were acquired to be distributed to institutions thanks to the financial support of teachers from Instituto Federal do Sertão Pernambucano at Rural Area Petrolina, besides the 5 liters containers supplied by the wineries.

In addition to SEDESDH and Casa Anjo da Guarda, the City Hospital Lagoa Grande, the Petrolina Department of Health and the Transforma Petrolina platform, which aims to link NGOs and social work volunteer programs, will also be considered. PROEXT has provided logistical support as well as planned other actions in response to Covid-19.

“The idea came about when I and my wife reflected on the many difficulties, especially regarding the health and social care services, as masks and alcohol have flown off the shelves. The purpose is to join forces so that we can all carry out actions in response to Covid-19, encouraging other citizens to think about initiatives like this”, said Professor Francisco Macedo de Amorim.

Source:

[Communication Department of Instituto Federal do Sertão Pernambuco.](#)



**MIDWEST REGION**




## INSTITUTO FEDERAL DE BRASÍLIA - IFB

### **IFB Public Servants and Students Mobilize in Solidarity Actions to Confront Covid-19**

In recent weeks, a chain of goodness, as known as IFB Solidary Science Network, started in the Instituto Federal de Brasília (IFB). This network brings together the initiatives of public servants and the students of the institution that collectively support for actions to help others in this period of social isolation due to Covid-19.

Among the main actions, we highlight the donation of more than 300 gallons of 70% liquid alcohol; the creation and production of protective boxes called “Covid Box” to protect health professionals during medical procedures; the production of more than 5,000 Face Shield masks, as Personal Protective Equipment (PPE) also for health professionals. The beneficiaries of these actions are hospitals and entities involved in combating Covid-19 in the Federal District, such as the Hospital Regional of Samambaia, the Teen Center, the Hospital Regional of Gama, the Blood Donor Center, the “Brasília Greater than COVID” movement and the Fire Department.


The actions of the IFB Solidary Science Network go beyond the production of personal protection products or equipment. There are also initiatives by civil servants and students who share their



experiences such as study tips, work at home, cooking, meditation, plant growing, food hygiene and much more. In Planaltina campus, IFB's agricultural campus, food from surplus production was donated to vulnerable students. The IFB's ten campuses develop support actions. In addition to the distribution of hundreds of food baskets, online they provide psychological support, training and conversation circles.

“We made food deliveries to families of more than four people, benefiting more than 200 people in our community. Besides the regular products that make up the basic basket, we added fruits, vegetables, cleaning products and handmade personal hygiene items. We also meet some specific demands with diapers and baby products”, explained general director of the the São Sebastião campus, Robson Caldas.

To avoid crowds of people, food and hygiene donation teams have been concerned with making deliveries to students' homes, as in the case of the São Sebastião campus, or using the support of local institutions, such as the Firefighters, in partnership with Samambaia campus. In this aforementioned campus, the general director Paulo Henrique also says that the survey of needs and distribution of inputs is being carried out by the Student Assistance Coordination team. “We prioritize families of our students and people who are in a highly vulnerable situation in the Samambaia region”, he said.




In Taguatinga Campus, the civil servants opted to raise funds for the purchase of basic food baskets, which were also distributed to students in socially vulnerable situations. “The Campus Student Assistance Coordination raised the list of students in need and we got together to act”, said Professor Gabriel Negrão.

For example, On Thursday, April 16th, a group of volunteers from the Planaltina campus participated in an action of blood donation to the Blood Donor Center. “Several solidarity proposals are happening simultaneously in all IFB campuses, aimed at the well-being and protection of people amid the pandemic, including psychological support and conducting online conversations,” commented Vinicius Machado dos Santos, Director of Teaching at Planaltina campus.

On the other hand, the Recanto das Emas campus focused its efforts and team on the production of the project “Free Forum of Knowledge, Science and Culture”, with programming broadcast on IFB TV, on the Youtube channel. This project includes the “Quarantine Cine” and live streams with connections and current dialogues for all the audiences.

In the face of all these good actions, the rector, Luciana Massukado, says “this is another return that we deliver to those who believe in education and our institution. Investment in professional education and science enables us to share knowledge, investigate problems, propose solutions and make interventions to improve




our reality. This is the Instituto Federal de Brasília, which articulates teaching, researching and extension for the common good. Seeing all these initiatives, I am sure that we are fulfilling our mission of offering educational teaching, researching and extension through innovation, production and dissemination of knowledge, thus contributing to citizen education and sustainable development, always committed to human dignity and social justice”.

More incentive - The Dean of Extension and Culture (PREX) and the Dean of Research and Innovation (PRPI) jointly launched a public notice to receive proposals for projects and actions to combat Covid-19 and its consequences. The IFB Emergency Committee was responsible for selecting proposals ranging from virtual consulting projects in marketing, retail and consumption for micro and small entrepreneurs, proposed by the Brasília campus, to the creation of a safety certification stamp in establishments in the sector of bars and restaurants proposed by the Riacho Fundo campus.

The public notice also reinforced the continuous support to initiatives for the production of Personal Protective Equipment (PPE) for health professionals, with the manufacture and free distribution of fabric masks to protect people in social vulnerability; The Covid Box, for the protection of medical teams, the development of the heart rate meter developed by the Ceilândia campus, the formulation of soap for the low-income community developed by the Samambaia campus. About pedagogical matters, another





proposal chosen was from Planaltina campus, which proposed the creation of a 3D didactic model for teaching about the virus.

In addition to the actions already mentioned, the IFB requested financial support from the Secretariat of Professional and Technological Education (SETEC/MEC) for the development of four projects to combat Covid-19, with fast delivery and presenting a technological nature. The National Council of the Federal Network of Vocational, Scientific, and Technological Education (Conif) will launch in April this year, an announcement for the selection of Research or Extension projects that aim to face the Covid-19 pandemic.

However, regardless of institutions, the IFB Solidarity Science Network is made up of people who build bridges between those in need and those who can help. Get closer to managing of your campus to see how you can contribute.

Source:

[Communication Department of the Instituto Federal de Brasília \(IFB\)](#)

Map of solidarity actions in all IFB campuses:





## INSTITUTO FEDERAL DE GOIÁS - IFG


### **IFG leads on preventative actions to fight the new coronavirus pandemic**

On February 29th, three days after the confirmation of the first case of COVID-19 in Brazil, the Instituto Federal de Goiás (IFG) started proposing through its social media channels preventative actions to fight the new coronavirus (COVID-19). As it spreads in the country and the pandemic was confirmed by the World Health Organization (WHO), those preventive institutional actions were intensified.

Later, on March 13th, COVID-19 Emergency Operations Committee was created, whose attributions include the planning, the follow-up and the execution of preventive actions to help people cope with the global public health emergency.

Communicative actions were intensified, for that the Social Communication Board proposed an initiative, which aims to make citizens of Goiás aware of how important social isolation is as a measure of preventing the spread of COVID-19, this is one of the main WHO recommendations in order to restrict mass transmission.


This idea, suggested by IFG's Social Communication Director, came up in a WhatsApp group where Communicators meet to discuss scientific divulgation in Goiás, and resulted in the campaign



*#FicaEmCasaGoiás* (*#StayHomeGoiás*). Such an initiative includes the participation of the following institutions: IFG itself, Instituto Federal Goiano (IF Goiano), the Universidade Federal de Goiás (UFG), the Universidade Federal de Jataí (UFJ), the Universidade Federal do Catalão (UFCat), the Universidade Estadual de Goiás (UEG), the *Fundação de Amparo à Pesquisa do Estado de Goiás* (Research Support Foundation of the State of Goiás - Fapeg), as well as the Catholic University of Goiás (PUC Goiás). Altogether, the aforementioned institutions are present in all regions of Goiás and attend to thousands of students.

### ***Nationwide Action***

Having as a starting point an effective regional action which mobilized communities of several cities in the state of Goiás, the idea was then taken to the National Council of the Federal Network of Vocational, Scientific, and Technological Education - Conif - for appraisal. It was discussed and approved by its Executive Board and then made into the campaign *#FicaEmCasaRedeFederal* (*#StayHomeFederalNetwork*), which mobilized 38 Federal Institutes, 02 Cefets (Federal Centers for Technological Education), as well as Colégio Pedro II, all part of a network that comprises 600 unities all over Brazil. "We are completely sure that reliable information




is our best ally in fighting and coping with the pandemic. Using communication and all the great potential of networking are helping dealing with COVID-19 nationwide, by means of making Brazilians aware of the official recommendations”, highlights Adriana Souza, journalist and IFG Social Communication Director.

### ***IFG in action***

Several actions are in course in the Rector’s office and at the IFG campuses, so below we highlight some of which directly impacts society.

### ***Rector’s Office***


There are other actions being developed by the Social Communication Board, the IFG’s Virtual Soiree, for instance, which it is a partnership with the Institutional Development and Human Resources Department, aiming to bring music to the people at home. It is well known that music contributes to improve the well-being and emotional health. Another initiative, besides the current ongoing communication campaigns, it is live interviews via Instagram regarding the trending topics at the moment. The first



one was held on April 27th, with the physician and researcher Thomaz Fleury Curado, from Johns Hopkins University, who addressed the new coronavirus and also gave first-hand information about the research going on at the aforesaid university and approved by the FDA (American sanitary Agency, similar to Anvisa in Brazil) which uses plasma to treat infected patients - even the critically ill. The idea is to map the results of this experimental treatment in the short term.

### ***Campus Luziânia***

Since the beginning of social distancing, the campus started producing 70% alcohol for donation. Initially, there were produced some bottles of the liquid alcohol and then the gel ones, following the National Surveillance Sanitary Agency (Anvisa) determinations, both freely distributed to the health workers of that municipality. The production is being made by the professors Leonardo François (head of academic area department), Romany Aires (coordinator of the vocational-technical course in Chemistry), Simone Paixão (manager of Research, Post-Graduation and Extension) and Reinaldo Reis (general director of the campus). The first batch was made possible through a partnership with the Commercial and Industrial Association of Luziânia (ACIL), which collected donations from entrepreneurs and the community in the region.




An Instagram profile (@psicologiaescolar.ifgluziania) was also created aiming at providing services with a focus on the emotional health of staff members and students. The campus psychologists are at the forefront of it, which aims to guide and contribute to the emotional well-being of the academic community during this period.

### ***Campus Aparecida de Goiânia***

Chemistry professors and lab technicians are working together on a project to produce sanitizing kits composed of hand sanitizer, liquid soap and hypochlorite. The kits, which will be distributed to families in situations of social vulnerability in the municipality of Aparecida de Goiânia, will contain explanatory leaflets for using the products, whose graphic design is being prepared by a professor of art on campus. The production will be carried out in the Chemistry laboratories of the Aparecida de Goiânia Campus and the distribution will be supported by the City Hall. The project is being implemented in partnership with Campus Anápolis.

### ***Campus Senador Canedo***

One of the actions has the direct support of the IFG Rector, professor Jerônimo Rodrigues da Silva, and has a group of three




researchers: Luiz Eduardo Bento, Márcio Rodrigues da Cunha and Wesley Pacheco Calixto. Through an articulation by the Rector, who included contacts with doctors and health companies, the researchers started the production of prototypes of Face Shield and N95 masks (Personal Protective Equipment - PPE), based on the models made available by companies to researchers. The goal is to produce around 1,500 masks in four months, and make them available to health professionals in Senador Canedo. The general director of the Campus, Maria Betânia Gondim, is also looking for partners to finance the production and she has already made contact with several companies and the local government.

There is also a technique under development that could allow up to four patients to be connected at the same time to a single respirator. For the tests, which are already being carried out, the researchers are using a respirator provided by a company that maintains and leases this type of equipment. The technique is still in the testing phase, but the first experiments are promising and revealed that the pressure and other parameters remain constant. However, the researchers warn: the adoption of this technique is only recommended in case of emergent need, in which there are not enough respirators due to the demand.

Other items in development are masks valves for patients connected to respirators, made from an Italian model that allows the reduction of up to 70% of contaminants in the environment. Both






the valves and the parts for the masks are made in a 3D printer. The rector is in contact with the Office of Vocational and Technological Education (Setec) in an attempt to obtain resources that allow for large-scale production.

### ***Campus Itumbiara***

The concern with agglomerations in shops that sell food, such as supermarkets and greengrocers, motivated campus general director, in partnership with the Rector's Social Communication Board, to record audios for broadcasting in a sound car throughout the city. The idea is to instruct the local community, reinforcing the recommendations of the health area and informing the contacts of the State Department of Health so that the population can ask their questions.

### ***Campus Cidade de Goiás***

Vulnerable communities are being mapped by the Cidade de Goiás Campus, with the support of civil society groups and the Municipal Secretary of Social Assistance, to fight against hunger, identifying families that will need food donations throughout this pandemic situation.



As soon as resources are released, the campus will also start producing 70% alcohol. By now, around 200 half liter bottles should be produced to be distributed to the community in social vulnerability situation.

Another action is called “Virtual Fair”, which consists of developing an interactive virtual platform to simplify communication among farmers and consumers, ensuring the virtual purchase of food and enabling the maintenance of income generation for small producers.

### ***Campus Jataí***

By teaming up with companies and the civil society, Jataí Campus has been working to make antiseptic alcohol production feasible, which will be delivered to health professionals settled in Jataí, as well as to students and professors from the Universidade Federal de Jataí (initiative partnership), involved in COVID-19 preventive activities. Three thousand pairs of gloves and a thousand caps were donated. Also, besides the 500 liters of 70% alcohol, Energética Serranópolis company donated four thousand packagings, which have been filled with the product before their distribution.




### ***Campus Anápolis***

A project that aims at producing hand sanitizer from alternative components, once the commonly production inputs are missing in the market. This action has been developed by Chemistry teachers. Besides, by teaming up with Campus Luziânia, 70% liquid alcohol will be produced. Also, in a partnership with Campus Aparecida de Goiânia, hygiene and cleaning supplies will be produced and then they will be donated to vulnerable communities.

### ***Campus Goiânia***

At the Campus by using the laboratories and available supplies, its staff members have been producing hand sanitizer, which will be distributed for free. However, this project has not been validated yet by sanitary and control agencies, whose role is to verify if the project is in complies with the current legislation.

The Communication department at the Campus has worked extensively in order to provide scientific information to the community through institutional social media, websites and other channels, where health recommendations are published, specially concerning about social distancing and isolation and other forms of prevention.



One more initiative, that took place on March 26th, involved some students who volunteered themselves to help producing the facial mask support (Face Shield model), a Personal Protective Equipment – PPE – to be used by health professionals. This is all part of a project that has been developed by UFG's Prototyping Laboratory. By means of using their own 3D printers, the students Múria Viana, Joiro Gomes Neto, Lucas Schmidt and Julyelly Roberta have produced, from home, the plastic piece that is used as the mask support. It is possible that other students also decide to volunteer themselves for the aforementioned project. Their goal is to produce the main raw material (filament), which they have been purchased.

### ***Campus Uruaçu***

“Em Casa Sem Fake” (At home without Fake News) is a tool for WhatsApp developed by the Educational Robotic Group (Grifu) in partnership with the project Scientist Girls. Through the tool, safe, reliable and up-to-date information, which come from the database of the WHO, Ministry of Health and approved by the campus health department, are made available. To access, just add the number +55 (62) 3357-8150 and send a “hi” message on WhatsApp. Through the chatbot it is possible to obtain 11 types of information (1. Latest numbers in the world; 2. Latest numbers in Brazil; 3. Protect yourself;

4. Ask your questions; 5. Don't believe in fake news; 6. Travel advice; 7. Share; 8. Important phone numbers; 9. Donate now; 10. Meet our team; 11. Leave your suggestion).

Another remarkable action is the production of facial protectors (Face Shield type mask) for distribution to health professionals from the Municipality of Uruaçu. The goal is to deliver 87 protectors in the coming weeks.


### ***Campus Formosa***

It is currently studying the possibility of taking part in the Luziania Campus Project in order to produce hand sanitizer.

### ***Campus Inhumas***

There were lectures to students, staff members and outsourced workers. Information about the virus, data and graphics about infections in other countries and recommendations and preventive measures were also presented.

The other campuses have actions focusing on the internal community. The Social Communication Board and the communication departments of all IFG campuses are showing full involvement of the



Institution's communicators. The main goal is to unify the information and to extend the reach of messages about public interest, the recommendations of sanitarian and health authorities, regarding the coronavirus pandemic, and institutional information.

Source:

[Communication Department of the Instituto Federal de Goiás](#)



## INSTITUTO FEDERAL GOIANO - IF GOIANO

### **IF Goiano expands actions against coronavirus**

The Instituto Federal Goiano (IF Goiano) joins its efforts to assist and help the fight against the new Coronavirus. Motivated by the Campus Ceres initiative, which is still going on, three other campuses are mobilized producing hand sanitizer and liquid alcohol to give to the population.

Rio Verde Campus is one of them, professors and students of undergraduate courses and master's degrees in Agro chemistry and Food Technology are involved. In just one morning of work the team produced 200 liters of gel and liquid alcohol, packaged in 200 ml bottles.

Professor Paulo Sérgio Pereira, one of those responsible for production, explains that the laboratories have the capacity to produce around 800 liters with the raw material available. The idea is to continue producing, but, for this, it is necessary to acquire of the necessary materials and maybe our partners can help with this matter.

For this first batch, we had the support of Rio Verde's company Rinco, which produces soft drinks and mineral water. It has donated 400 of 200 ml bottles, containers and gallons with the capacity to store 200 liters of the product. The production will, in part, be used

by the campus itself, and the other part will be giving to asylums and daycare centers in the municipality.


Iporá Campus is also an involved campus. They received a donation of 100 liters of concentrated alcohol to produce hand sanitizer and regular alcohol and destinate them for the municipal Health Department and asylums. The raw material was donated by the Vale do Cedro company, located in Palestina de Goiás.

Campus Trindade is another one that is preparing to produce liquid and gel alcohol. The campus already has a team of four students and four professors - two from the campus itself, one from the Instituto Federal de Goiás (IFG) and another from the Marcillon Dorneles State School - ready to receive the raw material needed for the production of 1,400 liters. The campus also wants to manufacture masks on a 3D printer, in partnership with the Universidade Federal de Goiás (UFG), and studies the purchase of new equipment for this production.

Finally, Campus Ceres, a pioneer in this action, delivered 45 liters of hand sanitizer last week - the first production shipment. The product was given on to the municipalities of Carmo do Rio Verde, Rialma and Rubiataba, partners of the proposal. The forecast is for production of 40 to 50 liters per week, starting in April. The raw material for the first batch was given by the CRV Industrial and Cooper-Rubi plants.

During the symbolic delivery ceremony, the general director of the campus, Cleiton Mateus, highlighted the relevance of






scientific work for the society development. In this campus, the team discovered a cheaper alternative to produce more alcohol, they improve the production efficiency. The production at Ceres campus involved a multidisciplinary team of teachers in the areas of Agronomy, Biological Sciences and Chemistry.

In a note, the municipal health department of Carmo do Rio Verde pointed out that the IF Goiano initiative is extremely relevant and will help the community health agents to combat the new virus. In Rialma, the product was sent to the public hospital, to health posts and to the city hall building.

### **Embrapii**

The IF Goiano Innovation Pole, located in Rio Verde, is another unit that is mobilized to combat the coronavirus. Last week, the team held a web conference with researchers from IF Goiano who were interested in carrying out innovation projects in partnership with companies. The initiative came after the Brazilian Company for Industrial Research and Innovation (Embrapii), which IF Goiano is a partner, reported on the release of extra resources and with specific rules for projects addressing the coronavirus problem. Although, IF Goiano is a member of the “Agro industrial Technologies” line, at this moment it is willing to be partner with companies for innovation projects to develop products and processes, such as



Personal Protective Equipment (PPE), equipment, drugs, tests and prediction methods, among others.

Source:

[Communication Department of the Instituto Federal Goiano \(IF Goiano\)](#)




## **INSTITUTO FEDERAL DO MATO GROSSO DO SUL - IFMS**

### **IFMS fixes respirators in order to help hospitals**

A Technical Cooperation Agreement signed by the Instituto Federal do Mato Grosso do Sul (IFMS) and a company based on the capital of the state have made it possible for respirators to be fixed in order to help patients with Covid-19, disease caused by coronavirus. The partnership was established on April 8th, 2020, by IFMS Rector, Elaine Cassiano. Up to now, 17 respirators have been fixed and used by Hospital Regional, in Campo Grande.

The main goal is to make an effective contribution to the population and public health towards the struggle against the pandemic. Respiratory problems are part of the symptoms presented by the people who contracted the disease and respirators can offer support in ventilation, taking the air to patients' lungs, in most serious cases, making it easier for the oxygen to get to the blood.

The Engetec Medical company, IFMS partner, is a specialist in clinical engineering and they have former IFMS students as part of their staff: Kenji Shimizu, Caio Galvão and Francisco Zuriaga Neto, who work along with professors in the process of fixing the devices, they were students at Campo Grande Campus.



The agreement is valid for three months and it can be extended in case it is necessary. It does not involve funding for IFMS civil servants or any kind of expenses to the institution. Professors and staff members in the Electrotechnology and Mechanics fields are taking part in the project.


The activities are carried out in the campus laboratories and they are supervised by the professors Fernando Guimarães and Marcos Antônio Cortez.

“Some devices are in very bad conditions, so we remove the parts that can still be used, and we put them into devices that are better. In some cases, we also change batteries. Yet, we verify the electronic processes, cooling, etc. After that, we send them to our partner, which is responsible for the calibration”, said Guimarães.

About 20 IFMS public servants take part, directly or indirectly, in this activity, identifying the possible problems with the devices.

The Director of Research, Extension and Institutional Affairs at Campo Grande Campus, Marylin Matos, informs that after the equipment is returned to Hospital Regional, the idea is to find other hospitals that can also benefit from the maintenance of their devices.

Experience – Kenji Shimizu, former IFMS student, finished his vocational-technical high school in Electrotechnology at Campo Grande Campus in 2018. Currently, he studies Electrical Engineering and works for Engetec, company that has partnered with IFMS. He tells us a little about how the knowledge he acquired as a student at IFMS has been important:



“What I use that I have learned in my vocational-technical high school program is related to electronics, pneumatics and automation. First of all, we analyzed the devices, so that we could observe which ones could work again after a simple repair or changes of pieces. Then, the respirators need to undergo a verification process, which would be calibration, and functional tests to make sure the equipment is ready to be used”, he explains.

Prevention – Federal Institute activities, ways to prevent Covid-19, institutional documents related to this situation and other relevant pieces of information about the pandemic are available on IFMS webpage against coronavirus.

Besides podcasts addressing tips on how to deal with social distancing and telecommuting, contact information and schedule of the campuses and rector’s office during the social distancing period are available. There is also a session of frequent questions, in which the community can read about IFMS activities.

Source:

[Communication Department of the Instituto Federal do Mato Grosso do Sul \(IFMS\)](#)




## INSTITUTO FEDERAL DO MATO GROSSO - IFMT

### **IFMT- Alta Floresta Campus will have a laboratory for Covid-19 detection in partnership with Paranaíta City Hall, MPE, MPT and Health Consortium**

The Instituto Federal do Mato Grosso (IFMT), through the Alta Floresta Campus, will have a laboratory for Covid-19 tests using the RT-PCR technique in real time. The implementation of the laboratory has a partnership with the Municipality of Paranaíta, the Public Ministry of Labor (MPT), the State Public Ministry (MPE) and the Health Consortium of the Municipalities of the Alta Floresta Pole.

This week, the city of Paranaíta started the purchase of equipment and materials. The Health Consortium of the Municipalities of the Alta Floresta Pole will be responsible for purchasing the reagents, according to the need of the municipalities to start the activities. The tests will be done primarily in the health professionals. The bill was approved in April by the Paranaíta City Council.

The IFMT will provide the physical space and technical professionals to work in the laboratory. The project was written by the doctoral professors, Laila Natacha Santos Brandão and Mônica Caroline



Pavan Cassel, who accepted the challenge proposed by the General Director of Alta Floresta Campus and the Pro-Rector of Extension.

The laboratory's capacity will be able to weekly provide 960 tests. The RT-PCR test is the most accurate on the market, with a low error rate in the detection of COVID-19. This technique makes direct detection of the infectious agent (SARS-CoV-2) in the sample. The test is considered a gold standard by the World Health Organization (WHO).

The laboratory will be implemented inside the Alta Floresta Campus, which will manage it. The forecast for the beginning of activities is in May. Biosecurity will also meet the requirements of WHO, which would be the physical safety of professionals who will work inside and outside the laboratory, reducing biological danger. The laboratory will be used by the campus, after the Covid-19 pandemic period, for research in the areas of molecular biology and to serve the population with direct tests and diagnostics.

According to the general director of Alta Floresta Campus, Júlio dos Santos, the general director of Cuiabá Campus, Octayde Jorge da Silva, introduced himself as a partner of the laboratory and even contributed to the articulations and he has already made available a professional to assist in the execution of the project.

"The other IFMT campuses are also invited to participate, as we are a network. The achievement is from IFMT, and it is not only from Alta Floresta Campus. I thank the support of Cuiabá Campus,

Administration Office, Extension Office (PROEX) and the Rector Willian de Paula for the support in the articulations”, said Julio dos Santos.

The mayor of Paranaíta, Tony Rufatto, highlighted that the IFMT is an institution that has been providing many services to the region and contributing to improving people’s lives. “The City Hall and the City Council of Paranaíta will be partners in another important project, as we understand that this laboratory will be important to save lives and it will be a great help to the economy as well”, said Rufatto.

The Pro-rector of Extension, Marcus Taques, pointed out that the laboratory, for carrying out RT-PCR tests, the detection of COVID-19 and located in the Alta Floresta Campus, is a historic achievement for the institution.

“In a moment of crisis that we are going through, the IFMT has shown its value in several other actions. The issue of testing for Coronavirus is one of the obstacles for health agencies. The Alta Floresta Campus makes itself available to take these tests in record time and it has been able to mobilize, it is incredible. I would like to highlight that it is all with resources from partners”, said Marcus Taques.

The Dean of Extension stressed that the Institution is seeking, through partnerships and public notices, to achieve something historic and emblematic for the IFMT as a whole.

Source:

[Communication Department of the Instituto Federal do Mato Grosso \(IFMT\)](#)





**SOUTHEASTERN REGION**



## INSTITUTO FEDERAL DO ESPÍRITO SANTO - IFES

### **IFES makes face shields for Healthcare Workers combating COVID-19**

*The goal is to make 10,000 face shields that will be donated to referral hospitals for patients with symptoms of the disease.*

The campuses of the Instituto Federal do Espírito Santo (IFES) started the production of face shields for donation to hospitals and health units in the State. They will be used as personal protective equipment (PPE) by health workers in response to the Covid-19 pandemic. The protectors are made with an acetate coating and can be sterilized and reused.

Aracruz, Cachoeiro de Itapemirim, Cariacica, Colatina, Piúma, São Mateus and Serra were the first campuses to take part in the action. According to the rector of Ifes, Jadir Pela, the initiative exemplifies the institution's network work. "At a time like this, our campuses work together to contribute to society combating the pandemic," he says.

The goal is that the campuses will be able to make at least 10,000 face shields in April and May. To do so, more than 15 3D printers have been working around the clock to make the face shields. According

to IFES's Pro-rector of Extension, Renato Tannure, the institution will also receive a donation of 3D printers to expand manufacturing, in addition to the engagement of students who will use their own equipment to print the protectors.

The material will be delivered to hospitals and health units in the state and municipal public health systems. On Wednesday (1), IFES at Colatina made its first delivery: six face shields were donated to the Sílvio Avidos State Hospital, which is a reference in urgent and emergency care for 17 municipalities in the Northwest region. On Monday (6), 20 more face shields were delivered to the Casa de Saúde Santa Maria, and on Tuesday(7), the Silvio Avidos Hospital received more 35 protectors.

“The manufacture of the PPE came about on the initiative of the staff and faculty members themselves, in contact with groups of company developers and other educational institutions. Now we are buying the materials to expand production and reach the goal we have set, explains Tannure. He points out that there are other initiatives in action at the Institute, to produce alcohol gel hand sanitizer, soap and cloth masks.

IFES will also launch a public call for companies interested in collaborating with the initiative. “We have already been contacted by three companies that want to help with equipment, materials or services”, says the Dean.

Source:

[Communication Department of the Instituto Federal do Espírito Santo \(IFES\)](#)




## INSTITUTO FEDERAL FLUMINENSE - IFF

### **IFF develops technology, research, and outreach actions to fight COVID-19**

The initiatives involve the production of 3D-printed face shields for healthcare professionals, laryngoscopes for the intubation of patients, cotton masks for the population, 70% alcohol, liquid soap, and food collection among others. Everything is for donation.


An important mobilisation for the benefit of the community as a natural consequence of Instituto Federal Fluminense (IFF), and other public education institutions' actions in Brazil – the focus on the population. It has become even more evident and indispensable in recent weeks to confront the novel Coronavirus pandemic that causes a disease denominated Covid-19.

IFF has developed several actions either with technology or research and outreach projects. One of the main initiatives is the production of 3D-printed face shields in the 3D printing park installed on IFF's Campos Downtown Campus. On March 27th, a month ago, printing and assembly operations began, and since then, two thousand face protectors have been manufactured. All of them addressed to the healthcare area to be worn by frontline professionals who are combating the novel Coronavirus.



The Personal Protective Equipment (PPE) has been donated to 18 organizations, institutions and government agencies in the state of Rio de Janeiro, which include the *Centro de Controle e Combate ao Coronavírus* (Centre for Controlling and Fighting the Coronavirus, City Government of Campos dos Goytacazes), *Policlínica da Polícia Militar do Estado do Rio de Janeiro* (Rio de Janeiro State Military Police Polyclinic), *5º Grupamento de Bombeiro Militar* (5th Military Fire Brigade), Álvaro Alvim Hospital School, *Associação Norte Fluminense dos Deficientes Físicos* (Northern Fluminense Association of the Physically Disabled), and *Unimed* (a private healthcare cooperative), all in Campos dos Goytacazes and Municipal Health Departments in the countryside of the state from Northern, and cities in the Northern, Northwestern, as well as the Lakes and Mountains regions of Rio de Janeiro.

According to the Rector of IFF, Jefferson Manhães, this is a group effort made by the staff and students to contribute to the needs of society at this moment of emergency, thereby collaborating to minimise the impacts caused by the novel Coronavirus. “The institution, besides reorganising itself from an administrative and academic perspective to overcome this pandemic period, it also provides all its intellect and infrastructure through the joint efforts of workers and students in order to develop technology and support in confronting Covid-19. And this is the result of an understanding that the institution belongs to the Brazilian State, and must always



be along with the society to assist in its demands and needs”, emphasises Jefferson.

The 3D-printed face shields are produced by IFF’s staff with the assistance from the Institute’s Innovation Hub (*Polo de Inovação Campos dos Goytacazes - PICC*) in the organisation, operation, and maintenance of the printers, and Sprint 3D, a spin-off company, which emerged at the Innovation Hub, and is incubated at TEC Campos. The Sprint 3D, which had arisen from the Control and Automation Engineering Programme alumni research of IFF’s Campos Centro campus, modelled the rods for faster printing of the best face-protector design in record time according to the guidelines of the Brazilian Health Regulatory Agency (Anvisa).


Partnerships have also enabled to increase productivity such as the support from the Industry Federation of the State of Rio de Janeiro (Firjan) that provided the PET-g laser cutting used for printing the arches to hold the acetate in the face protectors, which greatly optimizes the process. IFF has received several donations of raw materials, which are very important for the ongoing production of PPE. Among those donations, there are one thousand of acetate sheets from *Sindicato Nacional dos Servidores Federais da Educação Básica Profissional* (National Union of the Federal Basic Vocational Education Servants - Sinasefe), one thousand rods from *Instituto Politécnico da Universidade Estadual do Rio de Janeiro* (the Polytechnic Institute of the State University of Rio de Janeiro

- Uerj) and Senai Friburgo. In addition, there is the donation of materials for the production of 5,000 face shields by the GNA - Açu Natural Gas company that operates in *Porto do Açu*, in the city of São João da Barra-RJ. GNA's donation includes 5,500 acetate sheets, 220 filament rolls, 55 elastic rolls, and 55 liquid adhesive units.

“The most amazing thing about all that is the solidarity. These hard times reveal the best and the worst of individuals. We have seen in the media, the worst in some people, but here we have experienced, and felt the best in them and because of that I am rather pleased and hopeful”. says Henrique da Hora, Director of Internationalization and Innovation at IFF.

### ***IFF is equipped for the production of a laryngoscope with a camera used for intubating patients***

The team from the 3D printing park, based on the Campos Downtown Campus of the Fluminense Federal Institute, has adapted a laryngoscope with a camera to assist healthcare professionals in the intubation of patients with breathing problems. The initiative started as a request from *Centro de Controle e Combate ao Coronavírus* (the Centre for Controlling and Fighting Coronavirus) in the city of Campos do Goytacazes (RJ) to IFF's Innovation Hub. In addition to 3D-printed face shields, laryngoscopes are also going to be donated, however, to be produced on demand.



“The laryngoscope’s 3D printing is manufactured according to a project provided by Superior School of Industrial Design of the State University of Rio de Janeiro (UERJ’s Faculty of Industrial Design), which is based on a European model meeting the specifications of the health sector”, explains Henrique da Hora.


He also highlights that the final production cost is less than R\$ 50.00 with the use of PLA filament for printing, and a camera that is purchased for less than R\$ 40.00 compared to a conventional metal laryngoscope costing around R\$ 1,000.00.

“The camera is important to facilitate the intubation, conduct the procedure in the shortest time, and reduce risk of injuries to patients during such process”, comments Thiago Pessanha, entrepreneur of Sprint 3D startup, who has assisted in the production of the face protectors, and has also cooperated with the laryngoscope tests. He also says that several models have only LED lighting instead of a camera.

### ***Innovation Hub develops equipment to filter air from hospitals and ICUs***

IFF’s Innovation Hub, which is associated with the Brazilian Agency for Industrial Research and Innovation (Embrapii), is working on the development of new technologies and innovative






solutions that may contribute to society in the fight against COVID-19. In partnership with the *Biotecam* company, Innovation Hub researchers are developing an aerator filter to transform contaminated air with viruses and bacteria into clean air.

The low energy consumption mobile equipment shall be available in around 35 days, and it will be used to reduce the risk of contamination in field hospitals, Intensive Care Units (ICUs), and other health facilities.

The Director of the Innovation Hub, Rogério Atem, explains that the filter system absorbs the air circulating in hospital spaces into a container, where it passes through a sanitizing solution. After this cleaning process, the air is oxygenated and restored to the environment. “The air exhaustion system will guarantee that the critical environment with the existence of infected patients remains with slightly negative pressure so that the air is ‘washed’ in tanks, and then returned to the decontaminated environment”, says Rogério.


### ***Production of 70% alcohol, cotton masks, liquid soap, and bleach***

IFF’s Campos Downtown Campus, in an action conducted by a group of 11 teachers from the Secondary School Programme for Chemistry Technicians, has already fractionated four thousand




litres of 70% ethyl alcohol (liquid alcohol) out of 10 thousand litres of the product donated by the Agricultural Cooperative of the State of Rio de Janeiro - Coagro). The material is previously separated into smaller sterilised containers on the campus, so that there is no contamination. The bottled alcohol is donated to Guarus General Hospital (HGG, a government hospital), which is responsible for distributing it to reference institutions in the fight against Coronavirus in the city of Campos dos Goytacazes.

Moreover, the Institute is also getting equipped, and acquiring raw material to produce alcohol-based hand sanitizers, liquid soap, and cotton masks for donation. A coordinated and multicampus project foresees the involvement of Itaperuna Campus, which is going to produce five thousand cotton masks for donation in partnership with dressmakers working on a social project run by the City Government, and 1,500 liters of liquid soap distributed in 500ml flasks. IFF's Teaching Unit in Cordeiro will be supporting the production of cotton masks. Cabo Frio Campus will produce 70% alcohol for free distribution to hospitals as well as bleach among quilombola communities (a self-sustaining community of slaves who escaped from the Portuguese settlements in Brazil) in the region.



### Check out other actions that IFF has been developing to fight the pandemic and reduce its impacts:

- Supporting students under the social vulnerability status, such as an expansion of the permanence grants , and distribution of food parcels, as well as guidance on their rights during the pandemic, for instance, the publication of a booklet about the government social assistance payment (Emergency Aid);
- Ongoing “IFF *Solidário*” (Supportive IFF) internal campaign to collect cleaning products, and toiletries to be donated to the community;
- Psychological counselling and health guidance for the staff and students in all the cities within IFF’s scope;
- Teaching support actions for faculty and students;
- A campaign developed by the Social Communication Department to inform the community about the novel Coronavirus outbreak, as well as guidelines on fake news;
- Creation of a special web page on IFF’s Portal to monitor Covid-19 with information regarding the pandemic, and the actions of the Institute in confronting this situation;
- Production and release of videos with guidelines from the Institute’s professionals, in several areas, for the community, staff, and students;

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- Creation of a Crisis Committee made up of all representatives from the campuses and Rectory, including the Institution's healthcare professionals to manage actions that may help to reduce the impacts in the academic community by the novel Coronavirus pandemic and its effects;
  - Release of public calls to promote the development of researchers and outreach actions aiming at the academic community. For example, Outreach Course in Self-knowledge and Well-being, and a Photography and Digital Video Course;
  - Release of Internal Public Call N°. 49/2020 for the Selection of Projects in different areas with the objective of institutionalizing projects that are in progress, and encouraging new ones by fostering remote actions and activities that may serve the outside community and contribute to society at this moment while facing a state of public health emergency caused by the novel Coronavirus. IFF's employees have been able to submit outreach, art, culture, sports, research, and innovation projects. 46 projects have been submitted, and the final result will be released on April 30th.

Source:

[Communication Department of the Instituto Federal Fluminense \(IFF\)](#)



## INSTITUTO FEDERAL DO RIO DE JANEIRO - IFRJ

### **70% Alcohol production of IFRJ benefits institutions in different regions of the State**

The Instituto Federal do Rio de Janeiro (IFRJ) acts in an objective and voluntary way to help fight the coronavirus. And one of the most important battle fronts in this “war” is the production of 70% alcohol.

The Rio de Janeiro, Arraial do Cabo, Realengo, Duque de Caxias and São Gonçalo campuses have already produced more than 3,000 liters by April 24th. The material is intended for a number of local institutions, in the regions where the campuses are located, including communities, residents’ associations, hospitals, etc.

On the Rio de Janeiro Campus, until the end of the first half of April, 2,036 liters of alcohol for asepsis were produced, distributed in the forms: 70% INPM (for surface disinfection); 80% v/v glycerin (for cleaning the hands); and gel. Realengo has so far produced 418 liters of 70% alcohol and 259 liters of glycerin solution. On the Duque de Caxias Campus, there are 300 liters (adding 70% alcohol and glycerin). On the Arraial do Cabo Campus, whose production is in the 4th batch, the total reaches 530 liters. And, in São Gonçalo, 416 liters of 70% alcohol.

The main obstacle for large-scale production is the difficulty in obtaining inputs, especially 96° GL ethanol, and the polymer used as a thickener for the presentation of 70% alcohol gel.

IFRJ has received donations from companies such as Ambev, Única and BR Distribuidora, which, however, are not enough. In addition, another problem is the need to purchase packages of 300 and 1000 ml, suitable for filling the product.

In view of this scenario, IFRJ invites new partners who can donate more inputs, especially concentrated ethanol (the starting alcohol), and plastic packaging for the filling.

Check the list of beneficiaries with IFRJ production until April 25th:

### **REALENGO**

Movimento 100% Parque Realengo Verde; Instituto Fernandes Figueira –Fiocruz; Instituição Pretas Ruas; Unidade de Reinserção Social –Realengo; Clínica da Família Armando Palhares; Hospital Central da Polícia Militar; Hospital da Lagoa; Rotary Club do Méier (Comunidades Jacaré–Jacarezinho); Associação de Moradores Dom Jaime Câmara; GRES Paraíso do Tuiuti; Unidade de Reinserção Social Paulo Freire –Campo Grande; Prefeitura –Núcleo de Apoio à Saúde da Família/ Centro de Atenção Psicossocial 5.1; Centro de

Saúde Escola Germano Sinval e Clínica da Família Víctor Valla-Fiocruz; Unidade de Reinserção Social –Realengo; Clínica da Família Armando Palhares; Hospital da Polícia Militar de Niterói; Hospital Central da Polícia Militar; Hospital da Lagoa.

### ***RIO DE JANEIRO***

Hospital dos Servidores; Polícia Civil; Comunidade de Padre Miguel; Favela da Lagartixa; Centro Cirúrgico do Hospital Universitário Clementino Braga Filho; Movimento Amor ao Próximo (Comunidade do Terreirão); Espaço de Desenvolvimento Infantil Milena Santos Nascimento (Comunidade doTerreirão); UPP do Complexo do Alemão; Favela da Rocinha; Instituto Nacional do Câncer –Unidades Vila Isabel e Praça da Cruz Vermelha;Cefet; Comunidade Jorge Turco; Comunidades da Ilha do Governador: Dendê, Barbante, Colônia Z10, Duas Praias, Serra Morena, Rio Morto, Parque Royal; UPA – Manguinhos; Hospital Nossa Senhora das Dores; Projeto Ágape (Comunidades Para-Pedro e Colégio); Educandário Social Lar de Frei Luiz – Taquara; Instituto Casa Viva – Sulacap; Clínica da Família Valter Felisbino de Souza – Complexo do Alemão; Associação de Apoio e Fomento àEconomia Criativa –Complexos do Alemão; Movimento Eu Sou Catador, Duque de Caxias; Sindicato dos Peritos Oficiais do Estado do Rio de Janeiro.

### **ARRAIAL DO CABO**

Unidades de Saúde de Arraial do Cabo; Hospital Geral de Arraial do Cabo; Delegacia da Capitania dos Portos; Secretaria de Ação Social; Delegacia de Polícia de Cabo Frio, 126ª DP; Associação de Moradores e Pescadores da Prainha; Caixa Econômica Federal em Cabo Frio; Secretaria de Serviços Públicos de Arraial do Cabo (for the urban cleaning workers).

### **SÃO GONÇALO**

Abrigo Cristo Redentor (140 residents); Abrigo Lar Samaritano (65 residentes); PAM de Neves; Posto de Saúde do Barro Vermelho; Degase–CriaadNiterói (130 residents).

### **DUQUE DE CAXIAS**

UPA Sarapuú II; Unidade Básica de Saúde –Sarapuú; Sociedade Civil Pró- Melhoramentos de Gramacho (local residents' association); Centro de Referência Especializado em População de Rua (Centro POP –Duque de Caxias); Hospital Municipal Nossa Senhora do Loretto – Ilha do Governador; Centro Municipal de Saúde Necker Pinto – Ilha do Governador.

Source:

[Communication Department of the Instituto Federal do Rio de Janeiro \(IFRJ\)](#)






## INSTITUTO FEDERAL DE SÃO PAULO - IFSP

### **IFSP produces more than 32,000 face shields for donation**

*The shields will be passed on to the campuses, which will be responsible for forwarding them to the regional health institutions*

The Instituto Federal de Educação, Ciência e Tecnologia de São Paulo – IFSP, through an action by its Innovation Agency - INOVA and its Pro-rectory for Administration (PRA), is producing face shields on a scale. The forecast is that this week at least 8,000 more face shields will be transferred to the campuses, so that they can send them to regional health institutions that work directly in the fight against the coronavirus. These shields will be added to the other 32,000 ones already distributed.

The action has been organized as follows: PRA has provided R\$ 80,000 Brazilian reais in financial resources – from parliamentary amendments and from SETEC – for the purchase of the acetate front part of the face shields. In parallel to that, INOVA has articulated with companies from the cutting of this acetate to the donation of head supports. Also, INOVA and the Rectory have asked the campuses to do a survey of the regional demands for the shields, which have so far totaled more than 32,000 requests.



According to the director of INOVA, Professor Alexandre Chahad, the bridge with the productive arrangement has been essential. He states that there is a strong commitment by the IFSP to get the largest number of partners so that it can collaborate in meeting the demands of society in this pandemic period. So far, the following companies have contributed with donations: *Cocal Energia Responsável, Sicoob, CleAlco Açúcar and Álcool S.A, Anef BP and Reis Ferramentaria.*

For the production of the face shields, which in this case consists of coupling the acetate to the supports, assembly lines have been organized on some campuses: the first to start operating was Bragança Paulista. Those lines also work on other campuses as São Paulo and Sorocaba. According to Professor Chahad, the estimate is that IFSP will be able to produce and distribute, in addition to the 10,000 already planned for this week, at least another 30,000 face shields.

The Pro-rector for Administration, Professor Silmário dos Santos, believes that acting quickly and purposefully in scenarios like the current one, as IFSP has done, is essential, being in the DNA of government institutions in general, and in the current management of the Institute in particular. “It is part of our social role”, he says.

Similarly, the Rector, Professor Eduardo Modena states that IFSP’s commitment to producing and donating face shields, as well as glycerin alcohol and TNT masks, is a way of giving back to the

population all taxes collected, which in some way, according to him, it is what keeps public institutions operating. The Rector is keen to praise and acknowledge the efforts of managers, civil servants, and students who, in partnership with the productive sector, are mobilizing to help fight the pandemic.

Face Shields on campuses – Several of the institute campuses have been producing face shields using their 3D printers, and with the support of local servers and companies.



Source:

[Communication Department of the Instituto Federal de São Paulo \(IFSP\)](https://www.ifsp.edu.br/)




## INSTITUTO FEDERAL DE MINAS GERAIS - IFMG

### **IFMG distributes 4,000 liters of alcohol to hospitals and Health Unic Public System units in Minas Gerais**

Partnership with the cosmetics industry in Belo Horizonte enabled the production of 70% alcohol, which will be donated by the Instituto Federal de Minas Gerais to cities in the metropolitan region and the interior.

To reinforce actions to combat the advance of Covid-19, the Instituto Federal de Educação, Ciência e Tecnologia de Minas Gerais (IFMG) is committed to the production of 70% alcohol. Last Wednesday, April 15th, the institution started distributing 4,000 liters of the product to cities in the metropolitan region and the interior of the state. The action is the result of the project “IFMG Collaboration Network with public and private institutions to combat Covid-19”, and has a partnership with the Mutari cosmetics industry.

Initially, 800 gallons of five liters each are being delivered to hospitals and public health units. A truck was loaded on April 14th, in Belo Horizonte, in the Castelo neighborhood and, in this first shipment, the municipalities, with the greatest demand indicated in a survey carried out with the 18 municipalities where the IFMG has a campus and also with the State Department of Health, are receiving the donations.



According to the Director of Research and Graduate Studies, Fernando Braga, in order to produce alcohol, the IFMG signed a cooperation agreement with Mutari company, which has industrial alcohol production capacity, establishing a mutual collaboration, without transferring resources - financial resources. The purchase of necessary supplies and packaging was made by the Federal Institute. The company assumed the technical responsibility of manufacturing the product.

IFMG professor and research coordinator, Flávia Siqueira, explains that liquid alcohol has the same function as gel alcohol, with regard to protection against the new coronavirus. The liquid product was chosen because carbopol 940, a necessary ingredient in the composition of gel alcohol, is lacking in the market.

According to the director of Institutional Development of the IFMG, Wilson Vieira Costa, a work plan to produce an additional 21,000 liters of 70% alcohol was sent to the Ministry of Education's Professional and Technological Education. "If new resources are approved by the Federal Government or if inputs are donated by private companies, production may be expanded", he says. Any company interested in supporting the project can contact us by e-mail to [ddi@ifmg.edu.br](mailto:ddi@ifmg.edu.br).

Source:

[Communication Department of the Instituto Federal de Minas Gerais \(IFMG\)](#)




## INSTITUTO FEDERAL DO NORTE DE MINAS GERAIS - IFNMG

**Besides the field hospital, IFNMG Salinas Campus provides thousands of liters of alcohol and alcohol gel to health public of the city and surrounding areas**

In partnership with various local institutions, Salinas Campus of the Instituto Federal do Norte de Minas Gerais (IFNMG) has already produced and delivered until Friday (04/24) 250 kg of alcohol gel and 2600 liters of liquid alcohol 70% to the City Halls of the following cities: *Salinas, Taiobeiras and Santa Cruz de Salinas*. They will be used by the units of public health and other places to prevent Coronavirus transmission.

Through a partnership established this week, the Institute will receive from the Federation of Industries of Minas Gerais State/ *Federação das Indústrias do Estado de Minas Gerais (FIEMG) – Vale do Jequitinhonha* 10.000 liters of alcohol 96% to be diluted and converted to alcohol 70° and alcohol gel 70°, resulting in approximately 13.000 liters that will be distributed in partnership with Health departments of surrounding cities of *Vale do Jequitinhonha*, being a total of almost 16 thousand liters produced by the campus.

Besides the partnership established with FIEMG, the action is supported by many other entities. The health departments of



the mentioned cities have provided basic material and workforce to assist the action; the *SINASEFE* has financially supported it; The Association of *cachaça* producers from Salinas (APACS) altogether with *Cachaçaria Cândido* have donated *cachaça* sub-products , and the companies *Ciclo Dias* and *Arruda Alimentos* have donated basic input, packaging material and analysis of alcohol effectiveness.

At first, the Institute was responsible to lead the partnerships and make possible the logistics to transport the products, but later it started the production and the transformation of ethyl alcohol into alcohol 70% at the campus. The public servant who worked in the action were: Felipe Cimino Duarte (coordenador), Jânio Ferreira dos Santos, Guilherme Almeida Carvalho, Marcelo Rossi Vicente, Rafael Correia de Oliveira, Carlos Alexsandro Borges, Edilson Jardim Viana and Arilson Sousa. The alcohol is being produced at *Izabel* farm, a campus' property. The alcohol gel is being produced at the labs of the campus.

Production continues at full steam and new partnerships may be established to increase production and contribute more to the prevention of Covid-19 transmission.

### ***Field Hospital***

Another important action that has been put into practice by the campus, in association with the City Hall, is the setup of a field hospital with 80 beds inside the Vet Hospital of IFNMG to assist patients with suspected Covid-19, with mild and moderated symptoms as previously informed here.

The beds are already prepared: they were built from bunk beds donated by IFNMG; in the next following days the City Hall must receive the mattresses and other necessary materials to start functioning. We are still waiting for the return of some necessary procedures regarding the State government and Federal Prosecutor's office and also health staff training for those who are going to work at the hospital. In case of an increase in the number of suspected cases and consequently saturation of the public health system of the city, the field hospital is basically ready to welcome patients.

Source:

[Communication Department of the Instituto Federal do Norte de Minas Gerais \(IFNMG\)](#)





## INSTITUTO FEDERAL DO SUDESTE DE MINAS GERAIS - IF SUDESTE MG

### **Check what the Southeastern Minas Gerais Federal Institute has been doing to fight Coronavirus**

Since the arrival of the Covid-19 pandemic in Brazil, the Instituto Federal do Sudeste de Minas Gerais (IF Sudeste MG) reinforces its commitment to society and has been working for the health and safety of all. The Institute's efforts have been based on the triad of protection, production, and sharing of knowledge and support for the community.

Hygiene articles - Professionals from the Chemistry Department at Barbacena Campus are producing 70% glycerinated alcohol and soap for donations. Hygiene and cleaning kits will be assembled to be distributed to low-income families and entities institutions in need of for assistance. In the first stage, 30 liters of 70% glycerinated alcohol, 30 liters of liquid soap, and 100 bars of ecological soap will be produced, sufficient for the assembly of 100 hygiene and cleaning kits. The team is divided into groups of a maximum of three people, who work at scale, to avoid crowding. Professionals wear lab coats, gloves, and masks. In addition, they keep their distance from each other one another.

Liquid soap and 70% glycerinated alcohol will be used for personal hygiene as recommended by health agencies. The ecological soap, produced from used vegetable oil, will help mainly in the cleaning of household utensils and washing clothes, in general.

In order for the work to be done to have the work done, the Chemistry Department requested donations of used vegetable oil (from domestic use only), plastic bottles that are well-sealed for storage (used or not), and ethyl alcohol. Thanks to the community's support, the necessary amount of oil was quickly obtained. Now, only the bottles are still needed.

Personal protective equipment - After the Ministry of Health recommended that the entire population wear a protective mask whenever they leave the house, a rush to find the item made it disappear from the shelves. Thus, the Barbacena Campus, in an activity carried out by the One Thousand Women Program, decided to produce protective masks for donation.

The idea of making protective masks came from the professor of the Administration Course Program Hélder Silva, who, given the release of the Ministry of Health for the production of homemade masks, recalled the expertise of the students of from the One Thousand Women Program, and contacted the program coordination. The team embraced the cause, found female students for action and works on a voluntary basis. "It is important to highlight that the production is being done at home to avoid crowding, and


the masks are being sterilized and sanitized before distribution,” said Bianca Marques, coordinator of the Mulheres Mil Program One Thousand Women Program.

Also working on a voluntary basis is Professor Lívia Ávila, from Santos Dumont Campus. The teacher is part of the Hígia Project and produces face shields on 3D printers for health professionals. The Municipal Health Department of Santos Dumont received 50 face shields produced by the teacher. The professor had already made available ten personal protective equipment for a Basic Health Unit in the municipality. The Health team of the Fourth Mechanized Cavalry Squadron also received 11 face shields. Lívia will continue the production in the coming days.

There are still many doubts about the virus that is plaguing the world right now. However, it is already known that information and knowledge production are essential for us to go through this pandemic.

A group of professors from São João del-Rei Campus and from UFSJ (Federal University of São João del-Rei) developed a project that allows using knowledge of mathematical calculations and programming to simulate scenarios for each city about the expansion of Coronavirus cases and the needs hospital might have for beds during the peak of the illness.

The page <https://covid-19.ufsj.tech/> was built based on the results of a research carried out at the Imperial College London.



The work published on March 26, known as Walker model (named after one of the scholars), are mathematical simulations that used data that best illustrate the reality of each country. The authors modeled various expectations in terms of the number of infected, hospitalized, hospitalized in critical condition, and killed dead, in all countries in the world.

According to the world's press, it was thanks to the result of this study that governing authorities such as Donald Trump and Boris Johnson changed their attitudes towards fighting the Coronavirus, taking more effective measures such as social detachment distancing and financial increase to health assistance and the ones in most need.

Social isolation, an indispensable strategy in an attempt to slow down the growth rate of the contamination curve, has many consequences, including the reduction in the budgets of millions of families. With that in mind, at the Rio Pomba Campus, students from the Administration and Law courses Programs created a booklet to answer the public's questions questions from the public about the emergency aid granted by the government.

The Campus was also concerned in helping producers and traders in the region, and, for that, professionals and students from the academic departments of Management Sciences and Computer Science came together to develop the project "Hands Held". They created a virtual platform where the consumer can purchase the products directly from the producer.

The actions from the Southeastern Minas Gerais Federal Institute's actions have been widely publicized on its communication channels. And, in addition to the aforementioned information, it encompasses actions focused on the well-being of students, staff members, partners, and the community during quarantine. In addition, resolutions, documents, and instructions are also promptly released. To check all the institutional production, regularly visit the IF Sudeste MG website and social networks.

Source:

[Communication Department of the Instituto Federal do Sudeste de Minas Gerais \(IF Sudeste MG\)](#)



## INSTITUTO FEDERAL DO SUL DE MINAS GERAIS - IFSULDEMINAS

**200 institutions from 61 cities have already received 70% alcohol gel from IFSULDEMINAS**

*Federal Institute opens new front with the production of acetate masks*

The Instituto Federal do Sul de Minas Gerais (IFSULDEMINAS) has not stopped its actions to combat Covid-19. In 30 days of work, more than 200 institutions from Minas Gerais have been served, in 61 municipalities, with the sending of 70% alcohol gel and glycerin. To date, more than 2,534 liters of (gel) and 520 liters (glycerin) have been delivered. Among the institutions and organisms are: “Holy House of Mercy” hospitals, Nursing Homes, Shelters, Hostels, Health Departments, Emergency Care Units, the Military Police, SAMU (Emergency Mobile Care Service), Firefighters, the Federal Highway Police, the Civil Police, the Federal Revenue, Department, the Army, and IFSULDEMINAS campuses.

Another recipient, with 300 bottles, was the Pouso Alegre SEST/ SENAT, which has distributed the material among the truck drivers who travel along Fernão Dias Highway, along with other personal hygiene items. “This action motivates us to continue working. Your support is essential. Congratulations”, said truck driver Daniel




Isidoro da Silveira, 51, who was transporting a bulk soybean load to the interior of São Paulo. The partnership with SEST/SENAT goes a long way ahead. The Professional Development Coordinator of the institution, Wesley Michael de Carvalho, returned the effort with a thank you visit to the Rectory.

In total, there are 3,800 liters of gel product and 1,500 liters of glycerin already manufactured (part of it is stocked).

São Vicente de Paulo Nursing Home, in Varginha, is also one of the benefited institutions served. According to social worker Thaís Mendes Pereira, “we had a big decrease in donations and, on the other hand, an increased consumption in general. Before the pandemic, we were able to buy 5 liters of gel alcohol for R\$ 38.00 - on average. Today, it ranges between R\$ 200,00 and R\$ 290,00. Thus, the donation from IFSULDEMINAS was of great importance, because we are having difficulty finding it, and the price is extremely high. In addition to savings, the donation helps us maintain the safety of our elderly and employees”.

The “Holy House of Mercy” hospital in Poços de Caldas was one of the first to receive the donation. For its provider, Célia Maria de Souza, alcohol came at a good time. “We have 162 hospital beds that depend on this material. I can only thank everyone involved in the action”.

Lieutenant Colonel Marcel Madeira, from the Army’s 14th GAC (Field Artillery Group), in Pouso Alegre, pointed out that “the




material has been used by all members of the unit, contributing to the prevention against Covid-19”.

### ***Backstage work***

In order to enable all that, there is a lean and well-organized structure that goes from the production of the material, on the Inconfidentes Campus, to the reception, control, and weekly dispatch by the rector transport team. According to the logistics coordinator, Reginaldo de Oliveira, “there is a huge effort by everyone, from the telephone support to the delivery at those places. We are not a carrier but an educational institution. But this time, we are surprised. We have tried to optimize resources with objective routes, and deliver them in the shortest possible time”, he said. Weekly, the rector vehicles search for antiseptics on the Inconfidentes Campus, and carry out their distribution. For the deliveries, servants and outsource contractors received technical training from the health sector, and also used personal protective equipment.

The rector, professor Marcelo Bregagnoli, points out that “in addition to the satisfaction in helping the institutions that are on the front line, it is a pride to see civil servants and collaborators so committed to their actions, which have been very intense.” He and some board members have already participated in the deliveries, by helping the teams.





According to chemical engineer Eduardo de Oliveira Rodrigues, responsible for the production on the Inconfidentes campus, “we are pioneers in our work. The IFSULDEMINAS alcohol distillation column, in the educational area, is only found in one more unit in Rio Grande do Sul. We have been able to produce up to 400 liters a day, by working double shifts. Our main job is to maintain the product quality. We hope to produce as much as possible, while we have all the reagents, at a time when society needs this antiseptic so badly”.

### ***Partnerships and donations***

For the work to be done, the Federal Institute had the support from several companies, of the Federal Revenue Department, and volunteers. The donations were diverse: from carbopol, a chemical that gels alcohol, including glycerin, 5-liter cans, squeezes, and several shipments of distilled beverages, transformed into the final product. Anyone interested in donating materials such as carbopol, glycerin, and packaging to IFSULDEMINAS, can contact us by e-mail: [patrimonio@ifsuldeminas.edu.br](mailto:patrimonio@ifsuldeminas.edu.br)


### ***Acetate Masks – new work front***

The Federal Institute already has 400 acetate masks ready to protect health workers. The goal is to reach 1000. They are being produced on the Poços de Caldas Campus, with 3D printers provided by the other campuses of the institution.

The health facilities where they will be sent to are still being studied. The entire process has strict control at all stages. And production is expected to increase. A new shipment of seized alcoholic beverages, brought from Viracopos airport, as well as a shipment of liquors and perfumes should soon reach society as alcohol gel. The rectory has also obtained resources from the federal government to intensify the work.

### ***Kits for doctors, nurses, and technicians***

IFSULDEMINAS is now working on assembling kits to be delivered directly to health professionals (doctors, nurses, and technicians). Each one must contain: a 300 ml alcohol gel bottle, disposable surgical masks, acetate masks, gloves, and liquid soap. The institution requested the Health Regional Offices to provide the names of professionals who are in charge of combating corona in the region. IFSULDEMINAS is fulfilling its role with the regional



community through teaching, research, extension, and fighting against Coronavirus.

### ***Liquid soap production***

Another action to combat COVID-19 is being developed on the Pouso Alegre Campus, which started the production of handmade liquid soap for the distribution to public health units in southern Minas Gerais. The work is being developed by servants in the campus chemistry labs, where the bottling is also being made. About 250 liters of the material are already produced. The packaging was obtained through a partnership with Acipa Jovem and Iplasul Embalagens.

Find some of the cities that have already received the antiseptic produced by the institute:

Poços de Caldas, Inconfidentes, Bueno Brandão, Ouro Fino, Borda da Mata, Albertina, Pouso Alegre, Passos, Muzambinho, Varginha, Três Pontas, Machado, Turvolândia, São Gonçalo do Sapucaí, Três Corações, São Lourenço, Carmo de Minas, Pedralva, Heliadora, Tocos do Moji, Pedra Bela, Jacutinga, Senador Amaral, Toledo, Guaxupé, Monte Santo de Minas, Itajubá, Campo Belo, Três Pontas, Poço Fundo, Cabo Verde, Monte Belo, Gonçalves, Capitólio,

Capetinga, Carmo do Rio Claro, Cássia, Delfinópolis, Fortaleza de Minas, Guapé, Ibiraci, Itamogi, Itaú de Minas, Jacuí, Pimenta, Piumhi, Pratápolis, São João Batista do Glória, São José da Barra, São Roque de Minas, São Sebastião do Paraíso, São Tomás de Aquino, Areado, Alterosa, Nova Resende, Albertina, besides other organisms in São Paulo, Rio de Janeiro, and Belo Horizonte.

Source:

[Communication Department of the Instituto Federal do Sul de Minas Gerais \(IFSULDEMINAS\)](#)




## INSTITUTO FEDERAL DO TRIÂNGULO MINEIRO - IFTM

### **Ventilator prototype, mask donations and solidarity network for remote activities are some of IFTM actions to fight the pandemic**

The Instituto Federal do Triângulo Mineiro (IFTM) is contributing to the fight against the Coronavirus (Covid-19) pandemic in Brazil. Besides assessing the situation daily and taking protective measures for its staff members and students, IFTM is making an effort to prevent the proliferation of the virus. Some of the most remarkable measures IFTM has devoted to are: the development of a ventilator prototype that would have a final price cheaper than the one currently available in the market; the production and donation of masks for health professionals; and the solidarity network that was created among civil servants to share knowledge about remote teaching tools.

The initiative for the construction of a ventilator prototype came from the IFTM Campus Paracatu, with the student Charles Fernandes Pereira, from the 8th semester of Electrical Engineering, who worked with the support of professors Altair Fábio Silvério and Lucas Rodrigues de Almeida, also from that Campus, and of professor Vinicius Biulchi, from FINOM College, who is also the coordinator of Physiotherapy at the Municipal Hospital of Paracatu.




Charles developed a ventilator prototype using the Arduino free platform, stepper motors, solenoid valves and materials that could be easily found on the market for emergency care. Explained in a concisely way, a ventilator works as follows: a ventilator pushes oxygenated air into the lungs at a positive pressure and displaces fluid from the pulmonary alveoli to and from the bloodstream.

The project will be submitted to the public notice number 01/2020 of The National Council of the Federal Network of Vocational, Scientific and Technological Education Institutions - CONIF, which aims to select research and / or extension projects whose objective is to face the pandemic caused by the new Coronavirus (SARS-CoV-2). The expectation of those involved is that, in the final phase of the project, the ventilator may be offered for R\$ 3 thousand, which is 16 times less expensive than the market price for this type of equipment.

Deborah Santesso, Rector of the IFTM, highlights that the Institute needs to exercise its role in the communities where its campuses are located to assist in this moment of crisis. “IFTM is a reference institution in all the cities in which each campus is located and, as such, it has the responsibility to make itself available to the community to help fighting the pandemic”, said Santesso.

More than 1,500 masks reached the hospitals through IFTM - In March and April, three campuses were involved in donating and producing masks for health professionals. The Campus Uberaba,




for example, donated 1,400 respirator masks to the Hospital das Clínicas of the Federal University of Triângulo Mineiro - UFTM: 1,200 surgical masks, in addition to 200 respirator masks of the pff2 model, a semifacial filtering piece, which covers the nose and mouth and has filter efficiency for the retention of atmospheric contaminants present in the work environment in the form of aerosol. The masks were in stock on campus for use in laboratories for their technical and undergraduate courses in areas such as Food and Chemistry.

Two other IFTM Campuses were also involved in donating masks: the Ituiutaba Campus donated material for professor Rodrigo Nogueira Cardoso, a professor at the campus, to work with the production of mask holders on two private 3D printers in Uberlândia, the city in which he is isolated. The Patos de Minas Campus, which has a 3D printer, used its own material and donations for the production of masks.

Both campuses produced shield-type masks, in which the user fits a support on the head and has an acetate shield between the face and the environment. This type of mask avoids contact with droplets, saliva and nasal fluids that can reach the face, nose, mouth and eyes and can be cleaned for reuse.

With six years of experience in 3D printing, Professor Rodrigo made himself available to help as soon as the demand arose. He is part of a WhatsApp group, formed by other professionals involved in 3D printing, from which the manufacturing processes are



articulated. He managed to produce 50 mask holders, but at the end of March the group established a partnership with a company that manufactures parts by injection in Uberlândia and has an industrial production capacity and, since then, the 3D printing was no longer needed for this demand.


In Patos de Minas, the only 3D printer available in the IFTM Campus, purchased for a research project, was fully dedicated for more than a month to the mask production process, from the holders to the face shields. It was possible to produce 100 complete masks with materials donated by companies and by IFTM itself.

The masks were distributed to three hospitals in Ituiutaba, to an Emergency Unit and to a laboratory at the Federal University of Uberlândia – UFU, which makes rapid tests for Covid-19 in Ituiutaba.

The professor responsible for production in Patos de Minas, Carolina Pimenta Mota, explains that, throughout Brazil, researchers, professionals linked to 3D printing or even enthusiasts are devoted to the production of protective masks for health professionals.

“There is a national initiative organized by e-Nable, which uses the hashtag #cadaimpressaoconta (#EveryPrintingCounts). As I follow the social networks of several 3D printing channels, it was the first contact I had. The Hospital Regional had already registered as a receiver of materials and, as I know that the city of Patos de Minas has few 3D printers, I contacted Professor Junia Magalhães Rocha and together we organized the beginning of production and the collection of materials”, said Mota.






Support network for remote teaching and work - In addition to initiatives aimed at directly helping health professionals and those infected by Covid-19, such as those mentioned above, the solidarity network created for the development of remote activities also play an important role at IFTM. As soon as the face-to-face classes were suspended, several professors in the Computing area at the institution designed courses to help other colleagues use remote teaching tools.

One example is Professor Wilton de Paula Filho, PhD in Computer Science at the IFTM Campus Uberlândia Centro, who offered a course on Google Meet, an online tool that offers video calls by cell phone or computer, allowing the participation of several people at the same time. After teaching his first class to students of the Internet Systems Undergraduate Program, the professor observed that the experience had been well received by the students and offered the other IFTM colleagues a course on the tool, which was attended by more than one hundred people from several campuses.

Another professor who shared his knowledge to help his colleagues was Nélio Muniz Mendes Alves, PhD in Software Engineering, also from the IFTM Campus Uberlândia Centro, who shared his expertise about recording online classes, using YouTube to host videos and integrating with the Google tool Classroom. In the course, available on YouTube, the professor presented the OBS



software, widely used by those who work with video lessons and live broadcasting in general, free and user-friendly.

Source:

[Communication and Events Department of the Instituto Federal do Triângulo Mineiro \(IFTM\).](#)



## CENTRO FEDERAL DE EDUCAÇÃO TECNOLÓGICA DE MINAS GERAIS - CEFET-MG

### **Cefet-MG mobilized in the fight against the coronavirus**

Since March 2020, The Centro Federal de Educação Tecnológica de Minas Gerais (CEFET-MG) has been participating in many initiatives in all its campuses in order to help the fight against the new Coronavirus. The initiatives range from the production of protective materials to helping for low-income families.

Through 3D printing, students and administrative staff are assisting in the creation of face shield protection, wore by health professionals, in which an acetate plaque protects the user against droplets. At Curvelo campus, for instance, four 3D printers are dedicated to the production of the material. In Araxá, an initial number of 300 face covers has been delivered to the City Health Office, and a partnership between students and teachers from Leopoldina and Belo Horizonte Campuses intends to produce 500 more masks. The production of the material in 3D is also being made by the community from Divinópolis campus, which is going to donate the material to health institutions like Samu (Emergency Medical Services) and the Fire Department.

Another important item to stop the contagion by the Coronavirus, the alcohol gel, is also being produced by CEFET-MG.


In a partnership with the Federal University of São João Del Rei, the Divinópolis campus has developed a mechanical component that accelerates alcohol production. The expectation is that with the help of this device, the production increases from 40 to 100 liters of alcohol gel per day.

The Divinópolis campus is also involved in the project “Mutirão do Bem” (Task Force for Good), created by teachers and students from Fashion Production course and Fashion Design course. The initiative involves about 60 volunteers and predicts the production of 23 thousand cloth masks in April. The masks are going to be distributed to health institutions, social works, and other possible cases.

Aid – Beyond the production of protective materials, the initiatives from CEFET-MG also aims at helping people in need at the moment. In Belo Horizonte, the Department of Language and Technology is helping the ones who have the right of receiving emergency financial aid from the government on filling out the required forms. The action is directed to people having trouble filling out the form or without access to the internet.

In Curvelo, the research and extension program “Núcleo de Orientação para Sustentabilidade” (Guidance Center for Sustainability) collected food for low-income families and has been creating content and sharing information about the pandemic.

All the actions carried out by CEFET-MG are compiled in a hot site ([www.cefetmg.br/coronavirus](http://www.cefetmg.br/coronavirus)), where one can find cultural



activities, discussions about mental health, feeding and other pertinent themes to the social isolation period.

Source:

[Communication Department of the Centro Federal de Educação Tecnológica de Minas Gerais \(CEFET-MG\)](#)



## CENTRO FEDERAL DE EDUCAÇÃO TECNOLÓGICA CELSO SUCKOW DA FONSECA - CEFET-RJ

### **Cefet - RJ team launches a medical equipment repair app**

A multidisciplinary team of professors and researchers from the Nova Iguaçu Campus of the Centro Federal de Educação Tecnológica Celso Suckow da Fonseca (Cefet-RJ) developed a mobile application that connects public and private health units with companies and medical equipment maintenance technicians.

“The goal of SOSTecSaúde is to organize and streamline the logistics for repairing these types of equipment, especially those that might not have technical assistance coverage or are already out of the warranty period”, explains Tiago Prego, who is part of the app development workgroup.

The main proposal of SOSTecSaúde is to connect hospitals and clinics with the maintenance units, taking the possibility of establishing future partnerships to obtain logistical support and enable the transport of this type of equipment into consideration. Therefore, the app will work as a bridge, in which, the health units enter the information about the malfunctioning equipment so the maintenance team can check the availability and the service capacity.

The team joined forces aiming to help reduce the high number of medical equipment that is out of service and is of primary importance at this time.

“We realized that we could offer some technical support to fight the pandemic. The initiative came from professors Fabrício Lopes e Silva and Guilherme Campos, who gathered other colleagues and students from the campus, organically forming the team”, says Wellington Wallace, responsible for the application development.

Currently, 15 professors and researchers in the fields of Nursing, Physics, Informatics, and Mechanical, Production, Control and Automation, Electrical, Electronics, Computing, and Telecommunications Engineering are working on the app. The workgroups act on seven different fronts: project coordination, application development, database, 3D printing logistics, prototype development, besides the groups that research hospitals and medical equipment maintenance companies.

In addition to facilitating the repair of devices such as mechanical respirators, medication infusion pumps, vital signs monitors, and defibrillators, the app will also enable the replacement of parts and components. The team intends to apply a reverse engineering system for the design and manufacture of equipment parts that would no longer be repaired due to the difficulty of acquiring its components.

The app’s first version was concluded 15 days ago and is now available for clinics and hospitals to start registering defective equipment and maintenance teams to register to offer technical support.

Source:

[Communication Department of the Centro Federal de Educação Tecnológica Celso Suckow da Fonseca \(Cefet-RJ\)](#)



## COLÉGIO PEDRO II - CPII

### **Students from Niterói produce and donate IPE to the polyclinic of Barreto**


When students Kim Kakeya and Mauro Moledo, from Niterói campus, were awarded a 3D printer for winning the 'Prototypes Maker' challenge, during the CriaBrasil Festival, in 2019, they did not imagine the difference they would be able to make with such equipment in the life of health professionals.

On April 27, the duo, in partnership with the managers of the campus, donated 50 face shield masks, and 26 ear protectors to the team at Dr. João da Silva Vizella Regional Polyclinic of Barreto, in Niterói (RJ).

“The idea came up with the news from federal universities printing individual protection equipment (IPE) to supply the demand. It was within reach, why not help?”, commented Mauro. The donation was accompanied by the campus director general, Mônica Coimbra, and by the physics professor, Márcio Medina, who guided the students in the IPE production process.

The IPE was received by Paola Console and Denise Amorim, director and administrator of the polyclinic, respectively. Thrilled, they said the donation greatly transcended the delivery of 50






masks and 26 earmuffs. According to them, by preserving the lives of 50 employees, the material will also protect the relatives of those professionals, who are at risk for working on the front line, reaching an average of 200 people directly benefited by the action. The donated equipment will also contribute to safety in thousands of visits that will take place at the polyclinic of Barreto.

The donated equipment was produced based on international projects, validated by the World Health Organization (WHO). As raw material, the supplies that came with the 3D printer were used, as well as those acquired by the campus - the printer will also be used to make adapted teaching materials aimed at students served by Napne, a sector that serves students with specific physical or cognitive disabilities. That use was also another initiative of the students!

The production started at school, but due to the long printing time, and for the protection of the students, the equipment was transferred to Kim's home, where the project was continued. "We still have printing material to print more equipment. During the first weeks, I was personally responsible to produce the masks, now it is Mauro's turn. We shared it so it wouldn't be very tiring for any of us and, for the next few weeks, we intend to manufacture more, so that we can help other health posts that are lacking IPE", said Kim.

"Kim and Mauro's solidarity action is, without a doubt, a source of great pride for the entire school community at Colégio Pedro II", said Principal Mônica Coimbra. Professor Márcio Medina



also highlighted the multiplying character of this initiative. “The most important thing is that they serve as an example for more young people who are able to produce such safety equipment in the country’s regions. Niterói is one of the richest municipalities in Brazil, and is experiencing this difficulty. Imagine the other municipalities?”, he said.

The pair of students recalls that, in the fight against COVID-19, everyone can and must do their part. “Especially staying at home and protecting oneself, to avoid the proliferation of the disease. Moreover, simple initiatives like helping older people with market purchases already make a big difference”, said Kim. “It turns out that people don’t believe that staying at home ends up saving thousands of lives. Initiatives such as printing face shields, making donations, and protecting the group from the risk help a lot, but double caution is needed. It is not enough to wish to help, you have to be responsible”, completed Mauro.

Source:

[Colégio Pedro II Communication Department \(CPII\)](#)



**SOUTH REGION**




## INSTITUTO FEDERAL CATARINENSE - IFC

### **IFC works with the Santa Catarina community to combat Covid-19**

Since academic and administrative activities have been suspended, faculty and staff of the Instituto Federal Catarinense (IFC) gathered in the search for alternative ways to strengthen the prevention of the Covid-19 coronavirus and to support the Santa Catarina community.

Amongst the ongoing actions, we list a) the production of hand sanitizer and face shields for health care professionals; b) donation of on-campus organically-produced food, mainly vegetables and eggs and of other food items and personal protective equipment purchased by faculty and staff themselves; c) support of the civil servants for the municipal and state actions to guide society in general, among other initiatives.

The IFC rector, Sônia Regina de Souza Fernandes sent a letter to the State Government offering the Institute's infrastructure and let it available for the State Government and the municipalities, all the 15 campuses located in the cities of: Abelardo Luz, Araquari, Blumenau, Brusque, Camboriú, Concórdia, Fraiburgo, Ibirama, Luzerna, Rio do Sul, Santa Rosa do Sul, São Bento do Sul, São Francisco do Sul, Sombrio and Videira city.



According to this official letter, the Institution's physical spaces can be used to support health professionals with the preparation and provision of meals; rest on campuses where there are student housing; screening and monitoring of patients; or other actions that the Executive Branch judges it necessary and that IFC is able to meet.

According to the rector, it's important for the Instituto Federal Catarinense let itself available to the State Government, to enjoy our physical space, infra structure and equipment, production, besides specific products - such as gel alcohol -, constitutes a dimension of solidarity and empathy with what is happening in the Brazilian and international context.

“So it is up to us to collaborate beyond our walls, to contribute beyond the administrative and curricular aspects or pedagogical dimension, but also to stand up in a social and responsible attitude as a public institution before the Santa Catarina society.

Thus, I understand that it is a significant contribution, that is simple, but extremely important to help in the fight against Covid-19 and bring a little more comfort, especially to the health workers who are in charge of this process”, highlights Fernandes.



## **Masks**

At Luzerna Campus, the servers have already started the production of facial protectors for health professionals who are on the front line against the corona virus.

The supports of these protectors are made by a 3D printer and take an average of two hours to be produced. To increase the production, printers and servers from other campuses will be used.

“This material is for the exclusive use of health personnel. So it will be aimed entirely at health people, especially those who are directly on the front lines of the fight against Covid-19.

We are in contact with hospitals in the region to check the interest and possibility of assistance”, explains laboratory technician Mateus Pasine, from the Luzerna Campus, who created the project on the campus.

In Rio do Sul campus, the servers produced 150 supports for individual protection masks for health professionals at Alto Vale do Itajaí Regional Hospital, in partnership with the Rio do Sul Business Association (ACIRS), which organized the donations of the raw materials.

To help to grow the masks production, the IFC asks for collaboration from the community (businessmen, entities), in order to contribute with the donation of the necessary materials for production, which are crystalline sheets of acetate, 0.5 mm thick, and filaments 1.75mm PLA.

Those interested should contact the campuses in Luzerna ([cecom.luzerna@ifc.edu.br](mailto:cecom.luzerna@ifc.edu.br)) and in Blumenau ([cecom.blumenau@ifc.edu.br](mailto:cecom.blumenau@ifc.edu.br)).

### **70% gel alcohol**

After the initiative of the servers at the Luzerna and Sombrio campuses, other IFC units came together to reinforce their 70% gel alcohol production capacity and seek authorization from Anvisa to donate the product.

For this action, a committee was created with representatives from the Extension and Research, Graduate and Innovation provinces, from the Concórdia, Rio do Sul, São Francisco do Sul and Videira campuses, in addition to Luzerna and Sombrio.

“Initially, we are using our own inputs, with the collaboration of all IFC campuses and donations. Our perspective is to produce approximately 250 liters of 70% alcohol gel. However, in the event of greater community need and new input donations, we will be able to produce more,” explains Lucas Spiller e Barchinski, director of the IFC Campus Advanced of Sombrio.

Mr. Barchinski explains that all production will be distributed free of charge. “In addition to offering our students and public servants, the proposal is to distribute them to health and safety agencies, firefighters and low-income families.

But for external distribution, an authorization from the National Health Surveillance Agency - Anvisa is required, which has already been requested and we are waiting for the answer”, he reveals.

The Blumenau Campus awaits only the receipt of inputs to also start the production of gel alcohol.

For more details on how to support this action, contact the campuses: São Francisco do Sul: [estrutura.sfs@ifc.edu.br](mailto:estrutura.sfs@ifc.edu.br); Luzerna: [estrutura.luzerna@ifc.edu.br](mailto:estrutura.luzerna@ifc.edu.br); Sombrio: [direcao.sombrio@ifc.edu.br](mailto:direcao.sombrio@ifc.edu.br); Brusque: [estrutura.brusque@ifc.edu.br](mailto:estrutura.brusque@ifc.edu.br)

### ***Food donation***

So far, the population of the cities of Camboriú, Concórdia, Rio do Sul, Videira have benefited from the donation of food. In Camboriú, the Home for the Elderly- Father Antônio Dias received vegetables, fruits and vegetables.

In Rio do Sul, the donation of eggs and vegetables were delivered to Hospital Samária and the IFC team is organizing the donation to other entities in the municipality.

Concórdia Campus is sharing the vegetable production of the campus, Hospital São Francisco and Recanto do Idoso during the suspension of classroom activities, when the institution's cafeteria is closed.



Donations should be made for approximately 30 days, as there are about 2 thousand lettuce plants and 200 planted cabbages. Dozens of domestically produced eggs are also being delivered.


IFC's campuses in Santa Rosa do Sul and Sombrio organized food donations to residents' associations, hospitals and entities in their municipalities and other cities in the region, such as Jacinto Machado, Balneário Gaivota and Araranguá.

In Videira, 320 packages of ground coffee were donated to nursing homes and the city hospital.

### ***Civil defense***

Camboriú Campus offers Civil Defense Technical and Community Protection and Civil Defense courses, so they already have a partnership with the Integrated Risk and Disaster Management Center of Santa Catarina (CIGERD).

At the moment, the course team is working on the negotiation of technical alignments for municipal and state civil protection and defense, in partnership with CIGERD. According to the professor at Campus Camboriú, Cleonice Beppler, the partnership is old and highlights the commitment of the courses on issues in which the community and public bodies need technical collaboration for action planning. "We always seek to act in risk management, but always active in disaster management", he pointed out.



The general director of the campus, Sirlei Albino, emphasizes the importance, at this moment, of properly trained teams, such as registered technicians, who have knowledge to manage risks and disasters.

“With management, it is possible to minimize crises with preventive measures, through public policies, such as: master plan for civil protection and defense, contingency plans and mutual assistance plan, encouraging the self-protection of the population”, he says.

The director also highlights the importance of training in the area for representatives of municipal, state and federal institutions for the consolidation and expansion of public policies for prevention.

### ***Crisis Committee***

Established to address issues related to the Covid-19 corona virus pandemic at IFC, the Crisis Committee met on Thursday (26) and issued a new statement on the steps taken by the Institute to ensure the safety of the academic community.

Among them, the maintenance of the suspension of academic and administrative activities in person for an indefinite period.


Source:

[Communication Office of Catarinense Federal Institute \(IFC\)](#)

### **Lages Campus' Project Gathers Data about the Pandemic, Enabling Different Types of Investigation**

A free online interactive application (open source) developed by researchers of the Instituto Federal de Santa Catarina Lages Campus, allows for high-precision observation of the Coronavirus Pandemic worldwide, providing details about the situation in the state of Santa Catarina and in Brazil. The software Covid-19 Data Overview and Analysis can be accessed through this [link](#) and promptly displays Brazil's data and a specific window for Santa Catarina. By clicking on the Worldview button, the user is directed to the worldwide situation page.


Carlos Andrés Ferrero and André Salvaro Furtado, both from Lages Campus' Intelligent Data Analysis and Research Group, retrieve the pieces of information, based on confirmed cases and deaths, from three official sources: the John Hopkins University Coronavirus Research Center — a recognized North-American institution in the work with infectious and contagious diseases and hub for global analysis on the pandemic-, the Brazilian Health Ministry and the Santa Catarina State Health Bureau.



The machine learning techniques used in the application enable the mass volume of data to be consulted and visualized according to the user's interest from his different points of view. Through the system, it is possible, for example, to compare the evolution of the pandemic in multiple countries chosen, to identify which countries have similar rates compared to other nations or to view animations containing the growth in the number of cases and deaths directly on the maps.

Professor Carlos Andrés Ferrero explains that the comparison of the evolution of the scenario in numerous countries is a relevant feature to estimate the perspective of the pandemic, creating a scientific basis for trend inference and public policy guidance “ The analysis by similarity allows to observe which are the countries with the disease's curve most similar to the Brazil's, or to any other country, and, in that way, estimates Brazil's future based on some countries' historical background”, he stresses.

Besides being a research tool with public data in constant update, therefore providing factual information and possibilities of data crossings and different readings about the pandemic, the web system also have the purpose of constituting historical data repository about the Coronavirus SARS-Cov-2 pandemic, which has already infected 2.1 million people and caused the death of about 150 thousand (data collected from John Hopkins University on April 17th of 2020) since the end of 2019.



The project is one of the 55 initiatives selected through the Public Emergency Call for the Novel Coronavirus Pandemic Confrontation, opened in the beginning of April through the joint force of the Education (ProEn), Research, Post-Graduation and Innovation (ProPPI) and Services (ProEx) Pro-Rectories.

Source:

[Communication Department of Instituto Federal de Santa Catarina](#)



## INSTITUTO FEDERAL FARROUPILHA - IFFar


### **The Instituto Federal de Educação, Ciência e Tecnologia Farroupilha, Alegrete Campus manufactures 80% glycerin gel-alcohol**

Considering the global scenario of Covid-19 pandemic, caused by the new coronavirus (SARS-CoV-2), and the increased demand of antiseptics such as 70% gel-alcohol, the Instituto Federal Farroupilha, Alegrete Campus, started the manufacturing production of an alternative antiseptic formulation: 80% glycerin gel-alcohol.

Since the production of 70% gel-alcohol requires inputs such as carbopol, a component that is lacking in the market due to the great worldwide demand, the production of 80% glycerin gel-alcohol is a good alternative for antiseptic formulation. Although it is more liquid, it has the same antiseptic effect as the 70% gel-alcohol, but with easier access and lower cost raw material.

The 80% glycerin gel-alcohol is an antiseptic formulation for hands recommended by the World Health Organization (WHO), with the manufacturing production regulated by the National Health Surveillance Agency in the country.

The glycerin gel-alcohol has ethanol (ethyl alcohol), propanotriol (glycerin), hydrogen peroxide and water in its formulation. Glycerin works as a moisturizer for the hands, since the high concentration



of ethanol dries out the skin, in addition to making the alcohol stay on the skin longer.

The first stage of production was completed, by using all the necessary inputs available in the campus laboratories. Moreover, bottles will be labeled and the products will be distributed for use in the public health system.

The voluntary production was carried out by servants from the Instituto Federal Farroupilha (IFFar) in the campus chemistry laboratory, with the collaboration of *Manipulato* Pharmacy from the city of Alegrete, which donated the glycerin, and also a group of servants who contributed with the purchase of the bottles for filling the product.

Considering that the initial production was small, due to the reduced amount of inputs in the institution, the Federal Institute of Farroupilha is searching for resources through a call made by the Public Ministry of Labor of the city of Santa Maria, for the production related to fighting the pandemic of Covid-19. With the resources and inputs raised, the institution will expand the production of glycerin gel-alcohol in order to collaborate with society as a Federal Educational Institution, in the fulfillment of its social role.

Source:

[Communication Department of the Instituto Federal Farroupilha \(IFFar\)](#)

### **Combating Coronavirus is a central theme of IFPR's activities**

The Instituto Federal do Paraná (IFPR) has been developing many actions to combat Covid-19, as well as new activities to be carried out in these times of social distancing. Check out some of the actions:


The IFPR Covid-19 Propagation Monitoring and Control Commission has been meeting three times a week to discuss scenarios of the pandemic and conceive ways to assist the Institute to face the crisis.

The Pro-Rectory for Education (PROENS) released a public call for the Emergency Assistance Program. The program consists of granting assistance to students who are in a situation of social vulnerability, and who were covered by the Complementary Student Aid Program (PACE).

In Assis Chateaubriand, the IFPR campus delivered 31 face shields to Moacir Michelleto Hospital. The face shields are being used mainly by the professionals who attend the Intensive Care Unit. Soon, other municipal institutions will be assisted.

The branch campus in Astorga has developed low-cost visors for face shields. From a model developed in Colombo, a simpler version of






the acetate mask was designed in a way that it did not require a plotter to be manufactured, reducing costs and increasing production. The masks were donated to healthcare professionals in the city.

At the Barracão Branch Campus, several actions against the Coronavirus are being carried out even though the unit is temporarily closed. In Cascavel, teachers and students have been producing hand sanitizer to help fight Covid-19. In a joint action with the Fire Department, the students transform liquid alcohol 70% into its gel form.

To assist in combating Covid-19, professors at the Colombo campus developed air purifiers. The goal is to disinfect the environment using confined germicidal UV-C light. Validation tests are still being carried out in partnership with laboratories of the Federal University of Paraná (UFPR). Also, the Pedagogical and Student Affairs Department (SEPAE) of the institution delivered food packages for Solidarity Action.

As a way to help fight Covid-19, a group of professors from the Curitiba Campus and professionals from other institutions are producing masks to meet local and regional demands of the healthcare system.

In Goioerê, accessories for facial masks are being made using a 3D printer to supply the need of healthcare professionals for personal protective equipment (PPE). Furthermore, 1,400 cloth masks were produced in partnership with the Universidade Estadual de Maringá (UEM). The masks were donated to garbage collectors of the Environmental Treatment Association.




The staff of the Chemistry program of the Irati campus has been producing protective masks and hand sanitizer. Also, in Irati, the activity “Notes from a collective journal” gathered institutional actions that value dialogue and the community.

The Ivaiporã Campus delivered 1,700 liters of alcohol 70% to the health departments of the municipalities of Ivaiporã, Lidianópolis, Lunardelli, and Jardim Alegre, to the Bom Jesus Health Institute and the Kidney Hospital (Hospital do Rim).

At the Jacarezinho Campus, the academic community is getting ready to contribute to the fight against Covid-19. They are also making efforts to keep in touch with students. Furthermore, students from the Chemistry program have started the production of hand sanitizer. The campus is also producing soap and organizing food campaigns to be donated to vulnerable families in the municipality. Moreover, a cosmetic company donated 150 liters of hand sanitizer and 10 liters of shampoo and hair conditioner to be distributed to the community.

In Jaguariaíva, the staff body is creating virtual activities that tend to the physical and mental well-being of the academic community.

At the Palmas Campus, there is an ongoing production of protective masks. The outputs have been distributed to several neighboring municipalities and institutions. Also, due to the suspension of face-to-face activities, IFPR’s first graduation ceremony by videoconference was hosted by the Palmas Campus.



The Paranaguá campus, with support from other institutions, organized emergency assistance to the community. IFPR provided notebooks and tablets, as well as two exhibition stands and one online course.

At the Paranaíba Campus, teachers created a blog to disseminate relevant information about the Coronavirus. Moreover, the staff has produced 45 face shields for healthcare workers. They are also offering a course on the pandemic and providing tips on home economics.

The Pitanga Campus launched the campaign “IFPR in Action - Together in the fight against Coronavirus,” which aims at collecting donations for students in a situation of socioeconomic vulnerability. In Telêmaco Borba, the Movie Club project has been suggesting movies that people can watch during the period of social distancing.

Source:

[Communication Department of the Instituto Federal do Paraná \(IFPR\)](#)

### **Innovation and solidarity: IFRS community promotes actions against Covid-19**

Engaged in finding innovative solutions to combat Covid-19, public servants and students of the Instituto Federal do Rio Grande do Sul (IFRS) are manufacturing protective equipment for healthcare professionals, promoting social work, and carrying out research and extension projects. There are a continuously growing number of initiatives from the 17 campuses and the Rectorate.

The academic community is also working towards this goal, but remotely or in rotation to prevent contamination. Volunteers, many of them former students, companies, institutions, and public agencies, also offered to help. The output is being donated to healthcare agencies in cities that belong to regions where IFRS is present.

These are some of the initiatives:

#### ***Wine transformed into alcohol 70%***

To help control the spread of the new Coronavirus, wine is being transformed into sanitizer in the Brazilian capital of viticulture. Approximately 47 thousand liters of wine from the Winery School

of the Bento Gonçalves campus that were considered improper for consumption and commercialization have been already distilled. In a joint action with companies, IFRS donated roughly 7 thousand liters of alcohol to be used for disinfecting surfaces to the Municipal Health Department of Bento Gonçalves and other cities.

### ***Solidary fashion***

How can fashion and clothing contribute to society in times of health emergency? To answer that question, professors and technicians from the Technology Program in Fashion Design, as well as the Clothing Modeling Vocational Program, and the Fashion Production Vocational Program researched supplier standards to help meet the demand for textile personal protective equipment (PPE). Only in the city of Erechim, for instance, the Santa Terezinha Hospital Foundation personnel needs 2 thousand hospital gowns per month. Thus, the Erechim campus of the IFRS, with support from the APL Polovest Technological Center, the Alto Uruguay Clothing Industries Union, and volunteers, created the “Sew at Home” project to manufacture and donate hospital gowns to the Hospital Foundation.

### ***Innovation to protect healthcare professionals***

The IFRS Technological Accessibility Center (CTA), in Bento Gonçalves, is manufacturing a piece of equipment to increase the protection of healthcare professionals who attend patients with Covid-19. Called aerosol box, it consists of a transparent acrylic box that doctors and nurses place over the patient's head and acts as a mechanical barrier between them and the patient, reducing the risk of contamination. The first two units were donated to Tacchini Hospital, also in Bento Gonçalves.

Andrew Chaves Feitosa da Silva, a physician at IFRS, says that the box is a better mechanical barrier in comparison to face shields, serving as complementary protection to healthcare professionals. For situations where the patient develops Acute Respiratory Distress Syndrome (ARDS), and requires intubation and mechanical ventilation, the box has two openings that allow the doctor's hands to reach the patients' face.

Source:

[Communication Department of the Instituto Federal do Rio Grande do Sul \(IFRS\)](#)


### **Taskforce: IFSul has new actions to help fight the Coronavirus**

*From making masks to producing glycerin alcohol: different units of the institute join efforts in helping state health entities*

Solidarity can take many forms. At IFSul, it has manifested itself, for example, through the production of masks and gallons of glycerin alcohol destined to fight the new Coronavirus. Due to the increased demand for these products worldwide, a series of actions have mobilized the institute has organized a series of actions to try to supply the needs of hospitals and other health entities in the state. Find out about some of the initiatives carried out during the week at the institute:

### ***Several fronts, a single objective: to fight the Coronavirus***

At the Pelotas campus of IFSul, employees from many areas have been engaged involved initiatives actions against the Coronavirus. The campus community is working on different fronts, such as the production, packaging, and labeling of 70%




glycerin alcohol; the designing and production of face shields; and the organization of activities to support the maintenance of hospital equipment. These and other actions engage both active and retired employees, as well as and students.

A group of employees has been working In the production, bottling, and labeling of glycerin alcohol 70% to supply the region's public health system. They are not only putting scientific knowledge into practice but creating a network of transport, logistics, and solidarity. Nadja Dias da Costa, a professor at the Pelotas campus, came up with the idea for the task force and quickly mobilized students from the Chemistry program to find ways to produce hand sanitizer to tackle the shortage in pharmacies and the public health system. Other professors from the program also joined the group, and the project grew.

In partnership with both the Catholic and the Federal Universities of Pelotas, and the soft drink company Biri, the task force had produced more than a thousand liters of alcohol by April 27th. To make production possible, while some people took care of the technical part, transforming raw material into hand sanitizer or glycerin alcohol, others made bottles, went after raw material, improvised tools, and offered support in solving problems that could appear during the process.

The designing and manufacturing of face shields were another demand from hospitals in the region of Pelotas, and a significant





number of facial protective equipment is expected to be assembled. The production line includes 3D printers and laser-cutting machines from the campus, in addition to raw material, both provided by the institution and donated by local companies. The municipal healthcare system, including medical centers and hospitals, will be receiving the output. Employees and students took part in the process, which also had the support of local companies, which helped other similar projects, such as the ones coordinated by the Federal University of Rio Grande (FURG), by making their 3D printers available. Hospitals in the Pelotas region validated the first masks manufactured, and, after their endorsement, the production started.

The campus also developed a project to support hospital equipment maintenance, which was another demand from medical centers in Pelotas. The production of personal protective equipment (PPE) and the maintenance of hospital equipment was carried out through the effort of the Research Group on Electronics and Telecommunications (GET-IFSul) together with doctors and engineers that work in the hospitals of Pelotas. The maintenance project consists of the production of spare parts for hospital beds activation. The first pieces were ready in early May. It worth noting that the initiative includes students and volunteers.




### ***Fashion design at the service of health***

The campaign against the pandemic led fifteen people from the Fashion Design Program at the Pelotas-Visconde das Graças campus to apply their knowledge and textile technique in the production of protective masks. A total of 3,500 masks were manufactured at the institution. “Only five people are working in the campus laboratory, the others are receiving batches of fabric that were already cut to finish the production at their homes,” said Paula Bittencourt de Carvalho Leite, the coordinator of the Fashion Design Program and the leader for the initiative.

There are several steps to manufacture masks. Besides prototyping, the team has to mark, cut, and sew the fabric. According to the coordinator, all masks are two-layered and disposable. Carvalho Leite also points out that the institution had the support from the Federal University of Pelotas (UFPEl), which not only donated the fabric but is also helping with the sterilization of the masks before they are sent to medical centers and city governments of nearby cities.

### ***Strengthening the public health system***

After realizing the needs of the local hospital, the Camaquã campus staff reexamined their stock of raw material and joined the




efforts to increase their supply of glycerin alcohol. After coordinating with campus management, employees involved in the production put together a task force and allocated the entire stock of raw material available on the campus to the production of glycerin alcohol. Even though the IFSul unit was closed, two laboratories were reopened so that two technicians could work in each one. This first effort resulted in 70 liters of glycerin alcohol output, which was later delivered to Nossa Senhora Aparecida Hospital.

At the same time, they offered help to the Camaquã municipal government, according to Tales Amorim, the campus director. City management then requested a thousand liters of glycerin alcohol to be donated to the municipal Health Department. The raw material was provided by the municipal government and the production has already begun. Moreover, IFSul rectory donated 375 bottles to pack the final product.

### ***From materials donation to 3D printing***

Protective equipment such as masks, gloves, and caps that were stored in the Bagé campus was donated to the Santa Casa Hospital. Furthermore, the campus also began producing glycerin alcohol to help meet the demand of the city.



In the north of the state, the Passo Fundo campus joined other educational institutions and companies to answer a call from the Secretariat for Innovation, Science and Technology of Rio Grande do Sul. The working group is divided into several fronts, and the unit was responsible for face shields 3D-printing. Faculty members involved in the initiative are producing the material from home using 3D printers, loaned by the campus management. The face shields will be donated to Dr. César Santos Beneficente Hospital, to the Hospital of Clinics, and to other health departments and hospitals in the region that might need them.

Taskforce at IFSul - The chain of solidarity is growing, and other units of the institute are also making tests to start manufacturing products that can help the fight against the epidemic.

Source:

[Communication Department of Instituto Federal Sul-Rio-Grandense \(IFSul\)](#)



## FIND OUT WHO REPRESENTS THE FEDERAL NETWORK IN NATIONAL AND INTERNATIONAL DISCUSSIONS

The National Council for the Institutions of the Federal Network of Vocational, Scientific, and Technological Education (Conif) is a forum for discussing, proposing, and promoting policies for the development of vocational and technological education, research, and innovation. It represents the Federal Network, nationally and internationally.

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