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Arizona's Public Universities Stepping up to Provide Critical Resources and Supplies in the Fight Against COVID-19

(Phoenix, Ariz.) – From test kits to educational resources, to mapping supply chains and expanding detection and treatment opportunities, Arizona's public universities have ramped up to provide critical support and resources to address the diverse societal challenges brought about by COVID-19.

"Arizona's public universities are tremendous resources to our state and their response to the fight against COVID-19 is an example of how the universities are uniquely poised to provide critical support for the many societal challenges we face," said ABOR Chair Larry E. Penley.

"This week, the University of Arizona is on track to produce 7,000 COVID-19 test kits that meet Food and Drug Administration standards, on top of the 1,600 they produced last week," Penley said. "Arizona State University just launched ASU for You, an outstanding compilation of the vast resources that exist at ASU to support learners of all ages, providing a wealth of information, free courses, virtual field trips and more for educators, parents, students, home-schoolers, high school administrators - anyone can take advantage of the free resource. And Northern Arizona University, an international trailblazer in solving infectious disease problems, is actively researching COVID-19 proteins that will expand detection and treatment opportunities."

As the COVID-19 pandemic in Arizona evolves on a daily basis, statisticians from ASU and UArizona are working on a number of analyses, including projecting ventilator supply and demand in Arizona by region; new coronavirus cases and deaths; peak hospital bed use; and current public health interventions economic impact. Following are additional examples of the universities' resources, research and information in response to COVID-19 challenges:

Arizona State University

- ASU Launches Digital Education Platform – ASU for You
  ASU launched ASU for You, a digital education platform that provides content for all learners, including tools for educators and parents. The initiative is part of ASU's ongoing commitment to continued learning and meeting changing needs during this crisis. Most content on ASU for You is free.

  The site helps educators, families who choose home schooling, and families working to keep their children learning online during the current situation. The platform provides tools from ASU Prep Digital and assets from the Inspark Teaching Network and the Mary Lou Fulton Teachers College. ASU for You includes Virtual Field Trips, giving people a way to experience new places without ever leaving home. Items of interest on the site include "Ask a Biologist," "Ask an Anthropologist," and "The NASA Psyche Mission Innovation Toolkit."

- ASU Research Addresses Personal Protective Equipment Needs
  Just a week after the first U.S. case of the new coronavirus was confirmed in Washington state, ASU researchers Brenda Hogue, Bert Jacobs and Qiang "Shawn" Chen rapidly mobilized efforts to begin research toward developing a coronavirus vaccine. ASU Biodesign Institute director Josh LaBaer is leading efforts to help ramp up testing for COVID-19. His automated, robotic test platform has the capability to help the state test thousands of individuals per week. His team is also in the early stages of developing a simple blood test against all seven strains of coronavirus, including SARS-CoV-2. This will aid vaccine development efforts and help understand why some people get very sick and other individuals have no symptoms from a COVID-19 infection.

  Other research efforts include:
  - ASU scientists Brenda Hogue and Paul Westerhoff are developing ways to use heat treatment and UV light to rapidly sterilize and reuse critical supplies of personal protective equipment.
  - ASU's 3D printing capabilities have been ramping up and developing prototypes of supplies that are in critical demand for medical personnel and first responders, including face shields and testing kit components.
  - Nadya Bliss, the executive director of ASU's Global Security Initiative, is looking at ways to combat coronavirus misinformation that is causing undue fear and panic in the public. Her team is also working on ways to protect the public from opportunistic hackers, agents or scammers that propagate disinformation or want to steal personal information.

- PBS Dedicates Daytime Schedule to Educational Programming
  On Monday, March 23, Arizona PBS dedicated its daytime schedule to ongoing educational programming. Arizona PBS began to broadcast curriculum to its main station to help learning continue for all grade levels during Arizona's school closures. The station's schedule was developed to help schools and districts provide equitable access to learning for all students at home, regardless of access to the internet or computers.

  The effort includes a suite of free digital learning resources and a broadcast schedule of educational programs aligned with state curriculum standards. The website and programming have been endorsed by the office of the State Superintendent of Public Instruction. More than 250,000 children watch Arizona PBS on a weekly basis. The Tucson PBS station, Arizona Public Media, joined the effort to serve the needs of the entire state.

- Mindfulness, Caring and Connection is Focus of ASU Initiative
  This week, ASU's Center for Mindfulness, Compassion and Resilience launched an online mindfulness initiative called "Caring and Connection in the Time of COVID-19." Led by Teri Pipe, ASU's chief well-being officer and the founding director of the center, the initiative seeks to bring people together in an online setting to connect, reflect and recharge. The heart of the "Caring and Connection" initiative is a live, hour-long mindfulness and meditation session that takes place online, Monday through Friday, from noon to 1 p.m. MST. Each session includes a guided meditation or two, a discussion of the day's central topic — such as connectedness, compassion for self and others, the benefit of rituals and the power of community — and a chance for participants to ask questions and engage with one another. Each session is posted online following the daily broadcast and is available online for viewing at any time of day.

  Sessions are broadcast via YouTube and are free and open to the public.

Northern Arizona University

- Responding to Public Health Needs in Rural and Underserved Communities

NAU is responding to public health needs in rural and underserved communities by deploying many of its nursing and physician assistant students to help bolster community health capacity in responding to COVID-19. NAU students are on the front lines providing much needed support for public health needs across our state. Kingman Regional Medical Center is the largest health care provider in Northwest Arizona and the only remaining non-profit hospital in Mohave County. The hospital was one of the first in the nation to become a member of the Mayo Clinic Care Network. Frank Santorelli, a nursing faculty member, is traveling to Kingman three days per week to serve as a clinical preceptor for NAU nursing students completing rotations there.

Additionally, a team of NAU researchers is working in collaboration with the Coconino County Health Department, along with several of NAU's Master of Public Health students, on the front lines of data entry, management and analysis to develop models that predict the spread of COVID-19 throughout Coconino County and Northern Arizona.

- NAU Partners with Coconino County to Provide Test Kits
  NAU is working closely with Coconino County to aid in regional response to COVID-19 and has provided over 80 test kits to the county for use at their test sites.

- Economic Models Help County to Plan, Prepare and Cope
  NAU's Economic Policy Institute, headed by Joseph Guzman, has engaged with Coconino County to create economic models on the spread of COVID-19. The goal is to position the county to better plan, prepare, and cope with current and future ramifications of the COVID-19 pandemic. This includes research on potential job loss and potential transaction privilege tax loss.

- FEWSION™ Technology has Potential to Help Governments, Communities Plan
  The FEWSION™ Project, led by Ben Ruddel, associate professor in the School of Informatics, Computing and Cyber Systems, is a multi-institution project that brings together engineers and data scientists to map the food, energy and water supply chains for every community in the United States. These maps are available for public use through the FEW-View website, allowing people to understand how the supply chains are affected by external forces, such as natural disasters or public health crises.

  As the COVID-19 pandemic persists, the technology developed by FEWSION has the potential to help local communities and governments better plan for the impact it will have on their communities. Richard Rushforth, the lead research scientist on the FEWSION project for NAU, led data development for FEWSION 1.0, which allows both researchers and members of the public to access large datasets in an applicable way and learn more about where their food, energy and water come from and how different regions of the country are interconnected.

- Providing Personal Protective Equipment for Medical Professionals
  In response to COVID-19, NAU's Cline Library MakerLab (large-scale 3D printing environment) partnered with Guardian Air, a division of Northern Arizona Healthcare, to 3D print desperately needed personal protective masks for medical professionals in the Flagstaff area. The computer model used to print these masks was created by doctors from the Billings Clinic in Montana and is designed to be used with filter inserts or pieces of fabric medical masks. Made from a plastic material called PLA, this design is sturdy, non-toxic, cleanable, and reusable. Each mask takes approximately three hours to print and costs less than $5. To date, the MakerLab has printed 100 masks with financial support by Guardian Air.

- Researching COVID-19 Proteins
  NAU is a leading institution in solving infectious disease problems and is actively researching COVID-19 proteins that will expand detection and treatment opportunities.

- Expanding Bandwidth with Regional IT Support
  NAU's Information Technology Services division has supported the City of Flagstaff to expand their bandwidth to support increased network demands due to COVID-19. In addition, NAU is working closely with Navajo Nation leadership about locations on Navajo Nation land requiring expanded Wi-Fi capacity.

University of Arizona

- Producing Thousands of COVID-19 Tests
  The University of Arizona Health Sciences (UAHS) team noted the shortage in testing kits throughout the U.S. as a critical shortcoming and developed a test, secured the supplies and manufactured 1,600 kits that meet FDA standards over this past weekend alone. With more materials arriving, they expect to make more than 7,000 this week.

- Fast-Tracking Production of Tests
  The tests manufactured by UAHS are the result of efforts from the Molecular Microbiology Lab, led by Dr. William Lainhart. Over the past two weeks, the lab has worked tirelessly to create a test, a process that normally takes several months. Their test reduces the time necessary for diagnosis of COVID-19 from several days to eight hours or less.

- Ensuring Internet Access for Rural Arizona Students
  Leveraging the university's 26 Cooperative Extension Offices throughout the state — at least one in every county and seven offices on Native nations — UArizona is developing a plan to provide all Arizona higher education students with electronic access sufficient to support remote learning. This will provide support for many Native American and rural students who do not have access to dependable internet connections in their communities and cannot access online education during the current crisis.

- Addressing the Shortage of Personal Protective Equipment
  Engineering and health sciences researchers are teaming up to address the shortage of personal protective equipment in Tucson health care facilities. Amid the COVID-19 pandemic hospitals across the world are running short on personal protective equipment, including N95 respirators – masks that, unlike surgical masks, fit tightly around the face and are capable of filtering out 95 percent of airborne particles. In response to the shortage, a group of UArizona researchers is working to design, 3D print and test masks for health care workers at Banner – University Medical Center. Additionally, a group of students in the UArizona School of Theatre, Film & Television is doing its part to address the shortage of masks for health care workers in the wake of the COVID-19 pandemic. Students from the university Costume Shop are sewing "shell-style" masks that have dual layers, allowing users to fit them over surgical masks or N95 respirators. The university provided the masks to Banner – University Medical Center Tucson, which has distributed them to its trauma team, intensive care unit and other departments.

  UAHS also has secured thousands of gloves, hundreds of masks — including a significant percentage of N95 masks — dozens of goggles, disposable visors, gowns and other personal protective equipment and is conducting a detailed inventory of this personal protective equipment, and will establish drop-off locations for donations of additional personal protective equipment.

- Providing Health Care Support
  UArizona health experts and students from the University of Arizona Poison and Drug Information Center and College of Pharmacy are answering public calls on COVID-19. They are providing "surge capacity" for overwhelmed county health departments that, in addition to their regular work, are inundated with calls from the public about COVID-19. Public Health students will begin this week investigating positive COVID-19 cases on behalf of the Pima County Health Department. Students are providing child and pet care for frontline health care workers.

- Providing K-12 Online Resources
  UArizona has developed several online resources to assist K-12 teachers and parents at home with children during the COVID-19 outbreak. As educational institutions begin to move courses online because of COVID-19 concerns, librarians and other educators are experiencing an immediate increased need for easy-to-use, engaging e-learning tools. In response, Sidecar Learning, a startup based on software developed at the University of Arizona Libraries, has announced it is offering free licenses to all U.S. higher education institutions until May 31. Patricia Haynes with the Mel and Enid Zuckerman College of Public Health created a toolkit for teachers and parents to talk with children about coronavirus. A graduate student in Educational Psychology offers tips for first-time home-school teachers and parents online. UArizona Libraries has loaned over 300 computers to students and staff with a need and is offering Open Libraries/Internet Archive access available to anyone in the U.S.

  Note to members of the media -- following are media relations representatives at each of the universities:

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