

Drone Threats in the United States and Their Impact on Collegiate Activities

Michael Kelley C.P.P, C.P.D.
Director of Security Technologies,
The University of Alabama

Drone Threats in the United States and Their Impact on Collegiate Activities

The rapid growth of drone, or Unmanned Aerial Vehicle (UAV), technology in the U.S. has unlocked vast potential across multiple sectors, from agriculture to logistics. However, the widespread use of drones has also raised significant concerns about security, privacy, and public safety. In addition to broader national security implications, drones present unique risks to college campuses, affecting events, campus security, and academic research. This brief highlights key drone-related threats in the U.S., with a special focus on their impact on collegiate activities, and outlines recommendations for mitigating these risks.

Key Drone Threats

1. Surveillance and Privacy Invasion

Drones, equipped with advanced cameras and sensors, are highly effective tools for surveillance. Malicious actors can use them to gather intelligence on sensitive sites like research labs, defense facilities, or private organizations. On college campuses, drones may be used to breach the privacy of students and faculty, capturing images or videos without consent. This poses ethical and legal challenges for institutions that must balance academic use with the protection of individual privacy.

2. Airspace Safety

Unauthorized drones flying near airports have already caused numerous disruptions. This risk extends to colleges, particularly those near air traffic zones or conducting flight-related research. Drones can interfere with outdoor sporting events, posing a risk to athletes, spectators, and staff. Incidents of drones crashing into stadiums or hovering over events have resulted in game delays, injuries, and raised concerns about crowd safety.

3. Weaponization and Terrorism

Drones can easily be modified to carry payloads such as explosives or biological agents, presenting serious national security risks. Open college campuses and large public gatherings, such as sporting events or concerts, are vulnerable to drone-based attacks. The small size and agility of drones make them difficult to detect or neutralize, increasing the danger of a potential terrorist incident.

4. Smuggling and Illegal Activities

Drones are increasingly being used to smuggle drugs, weapons, and other contraband across borders and into prisons. College campuses are not immune to this issue, as drones can deliver illegal substances or restricted items to campus areas undetected. This trend challenges traditional campus security measures, particularly at large universities with open layouts that are difficult to monitor.

5. Regulatory and Legal Liabilities

If a drone is flown without a licensed (Part 107-certified) operator for non-recreational purposes, the university could face:

- a) Civil fines (up to \$27,500)

Drone Threats in the United States and Their Impact on Collegiate Activities

- b) Potential FAA investigation
- c) Lack of Registration: All drones over 0.55 lbs must be registered. Use of unregistered drones by university staff or contractors can incur fines.
- d) Flying Over People or Events: Violates operational waivers unless pre-approved by the FAA, especially critical for sports venues or graduations.

Unauthorized drone flights resulting in injury to students or visitors, or damage to campus infrastructure, may lead to:

- a) Negligence lawsuits against the university
- b) Civil lawsuits for **invasion of privacy or harassment**
- c) Title IX implications if the footage involves students in vulnerable situations
- d) Increased liability insurance premiums
- e) Settlements or litigation costs
- f) Create breach reporting obligations under **HIPAA, FERPA, or state data breach laws**

Threats to Collegiate Activities

Drones present specific challenges to universities and colleges, often hosting large public events and engaging in sensitive research. Key risks include:

- **Large Gatherings:** College graduations, sporting events, and other public gatherings are prime targets for drone-based disruptions or attacks. Drones flying over crowds can cause panic, injuries, and severe safety concerns.
- **Research Interference:** Universities conducting sensitive research, especially in aerospace, robotics, or defense-related fields, face the risk of espionage. Drones can capture confidential data or interfere with research operations.
- **Privacy Violations:** Student dormitories and campus spaces, assumed to be private, can be invaded by drones, raising privacy and legal issues.

Mitigating Drone Threats: A Comprehensive Approach

As drone technology evolves, universities face increasing risks from unauthorized drone activities. However, institutions can take proactive steps to mitigate these threats by implementing a comprehensive strategy that combines technology, partnerships, public awareness, and advocacy. The following are key recommendations for universities:

1. **Implement Drone Detection and Mitigation Technologies** Universities should invest in advanced technologies capable of detecting and neutralizing unauthorized drones. This can include radar, radio frequency (RF) detection systems, and other monitoring tools that track drones entering restricted airspace. Counter-drone technologies, such as jammers or interception systems, can disable unauthorized drones before they pose any risks.

Drone Threats in the United States and Their Impact on Collegiate Activities

For example, the University of Southern California has successfully deployed a drone detection system that tracks unauthorized drones near its campus. Other institutions have experimented with geofencing technologies, which automatically force drones to land or divert when they approach sensitive areas.

2. **Strengthen Collaboration with Law Enforcement and Industry** Effective drone threat mitigation requires strong collaboration with law enforcement agencies such as local police and the Department of Homeland Security (DHS). Universities should establish real-time communication channels with these agencies to ensure a quick response to suspicious drone activities, particularly during large events.

Universities should also foster partnerships with drone manufacturers to integrate security features such as geofencing into future drone models. These partnerships can facilitate the exchange of data and intelligence on emerging drone threats and support the development of countermeasures.

3. **Promoting Public Education and Awareness** Education is crucial to mitigating drone threats on campus. Universities should launch public awareness campaigns to educate students, faculty, and staff about the risks associated with unauthorized drone use. These campaigns should encourage the reporting of suspicious drone activity and emphasize compliance with campus policies regarding drone usage.

Such informational efforts ensure that academic and recreational drone activities are conducted safely and following regulations.

4. **Advocate for Stronger Legislative and Regulatory Frameworks** As drone technology evolves, so must the regulatory framework governing its use. Universities can play a pivotal role in advocating for stronger state and federal drone regulations. This includes supporting stricter registration requirements, mandatory pilot licensing, and the implementation of geofencing mandates for critical areas such as campuses, airports, and military bases.

Although the Federal Aviation Administration (FAA) requires registration for drones weighing more than 0.55 pounds, more stringent regulations are necessary to address the growing risks. Universities should support legislative efforts to standardize the deployment of counter-drone technologies in civilian environments.

The proliferation of drones in the U.S. presents significant risks, particularly in the collegiate environment. While drones offer substantial benefits for research and innovation, their misuse threatens security, privacy, and public safety. Colleges must proactively address these risks by investing in detection systems, enforcing policies, and fostering collaboration with law enforcement. A balanced approach will enable institutions to benefit from drone technology while minimizing the associated threats to campus life.