

## Use of Unmanned Aircraft Systems (“UAS” or “Drones”)

**\*\* For Office Use Only \*\***

Draft Date: 02/14/17

Policy ID: PRM/SEC

Status: New

**Contact Office:** Office of the Vice President for Research

**Oversight Executive:** Vice President for Research

**Applies to:** Academic Division, Medical Center, and College at Wise

### **Reason for Policy:**

This policy and its procedures are intended to promote safe and efficient operation of unmanned aircraft systems in furtherance of the goals and mission of the University. This policy and its procedures also are intended to help protect the privacy and security of students, employees, patients, and visitors. Unmanned aircraft systems are commonly referred to as drones.

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### **Definitions:**

**Aircraft:** Any contrivance invented, used, or designed to navigate, or fly in the air.

**Civil Aircraft:** Any aircraft except a public aircraft.

**Model Aircraft:** An unmanned aircraft that is: (1) capable of sustained flight in the atmosphere; (2) flown within visual line of sight of the person operating the aircraft; and (3) flown for hobby or recreational purposes.

**Public Aircraft:** An aircraft owned and operated by the United States Government, government of a State, the District of Columbia, or a territory or possession of the United States or a political subdivision of one of these governments in furtherance of a governmental function, and that is not used for commercial purposes.

**Small Unmanned Aircraft:** An Unmanned Aircraft weighing less than 55 pounds.

**Unmanned Aircraft:** An aircraft that is operated without direct human intervention from within or on the aircraft.

**Certificate of Authorization or Waiver (COA):** The terms “certificate of authorization” or “certificate of waiver” mean a Federal Aviation Administration (FAA) grant of approval for a specific flight operation. COA is an authorization issued by the Air Traffic Organization to a public operator for a specific Unmanned Aircraft activity. After a complete application is submitted, the FAA conducts a comprehensive operational and technical review. If necessary, provisions or limitations may be imposed as part of the approval to ensure the Unmanned Aircraft can operate safely with other airspace users.

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**Air Traffic Organization COA:** A COA issued by the FAA’s Air Traffic Organization (ATO) permitting operation of an Unmanned Aircraft System (UAS) pursuant to the University’s Exemption under circumstances not permitted by the Blanket COA.

**Blanket COA:** A COA issued in conjunction with the University’s Exemption that permits UAS Operation within certain airspace limits as set forth in the document.

**Public COA:** A COA issued by the FAA permitting a UAS to be operated as a public aircraft in furtherance of a governmental function.

**Exemption:** The University’s Exemption issued under [Section 333 of the FAA Modernization and Reform Act of 2012](#), to permit the operation of a UAS as a civil aircraft under the terms and conditions set forth in the Exemption.

**Federal Aviation Administration (FAA):** National aviation authority of the United States. As an agency of the United States Department of Transportation, it has authority to regulate and oversee all aspects of American civil aviation.

**Governmental Function:** An activity undertaken by a government, such as national defense, intelligence missions, firefighting, search and rescue, law enforcement (including transport of prisoners, detainees, and illegal aliens), aeronautical research, or biological or geological resource management.

**National Airspace System:** The National Airspace System (NAS) is the airspace, navigation facilities and airports of the United States along with their associated information, services, rules, regulations, policies, procedures, personnel, and equipment.

**Remote Pilot Certificate with a Small UAS Rating:** A Certificate issued under the Code of Federal Regulations ([14 C.F.R. Part 107](#)) to permit a person to operate a UAS weighing under 55 pounds as a civil aircraft.

**Remote Pilot in Command:** The Remote Pilot in Command is directly responsible for and is the final authority as to the operation of the small unmanned aircraft system.

**See and Avoid:** The duty of the Remote Pilot in Command to exercise vigilance to avoid interference with other aircraft and obstacles that would affect the safe operation of the aircraft.

**Unmanned Aircraft System (UAS):** An unmanned aircraft and associated elements (including communication links and the components that control the unmanned aircraft) that are required for the Remote Pilot in Command to operate safely and efficiently in the national airspace system.

**Unmanned Aircraft Systems (UAS) Operations Manager:** Individual designated by the University with responsibility for coordination of flights, submission of reports, and management of all UAS operations.

**University Property:** Land or buildings that the University owns or leases and that is under the direct control of The Rector and Visitors of the University of Virginia.

**Visual Line of Sight:** The ability of the Remote Pilot in Command to see the aircraft at all times when in flight using the unaided eye with sufficient clarity to determine the aircraft's location, attitude, altitude, and direction of flight, and to avoid other aircraft or hazards.

**Visual Observer:** A person who has been designated to assist the Remote Pilot in Command in complying with his or her See and Avoid duties and maintain a lookout for other aircraft or hazards that may affect the safety of flight.

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### **Policy Statement:**

This policy establishes University oversight and approval procedures to facilitate safe and responsible UAS operations. Use of UAS may significantly contribute to the research and academic activities of the University but also pose risks to the University and community for several reasons:

- The population and building density of the University's main Grounds, Medical Center, College at Wise, and surrounding property is high, which creates safety risks to persons and property;
- Any interference with the University of Virginia Medical Center's heliport(s), which is on University property, poses safety risks to the helicopter pilot, any patient(s) being transported by helicopter, and others;
- Any flight near the University of Virginia Medical Center may pose a serious threat to patients' security and privacy;
- Aircraft takeoff and landings as well as the accompanying noise are generally distracting and may interfere with instruction, research, and patient care;
- Aircraft also pose other risks to students and the University community, including invasion of privacy and security, among other risks.

Current faculty, staff, employees, students, and approved parties who would like to operate UAS ("UAS Operators" or "Operators") on University property or *on behalf of the University at any location* must receive approval under provisions described in this policy. It is the responsibility of the UAS Operator and Remote Pilot in Command to be knowledgeable of and comply with this policy as well as all applicable federal, state, and local laws that govern or effect the UAS operation.

### **Privacy:**

UAS operations which involve the use of photography or videography that violates the reasonable expectation of privacy of students, faculty, staff, employees, or patients are strictly prohibited. Violations of privacy may be subject to criminal and/or civil penalties under federal and state law.

## **To Whom This Policy Applies:**

For purposes of this policy, all current University, Medical Center, and College at Wise faculty, staff, employees, and students may operate UAS with the approval of the UAS Operations Manager. Other persons acting pursuant to an agreement approved by The Rector and Visitors of the University of Virginia (“approved parties”) also may operate UAS with the approval of the UAS Operations Manager. Approved parties include vendors, Contracted Independent Organizations (CIOs) or other registered student groups in good standing with the University, and other parties who are sponsored by a unit of the University and who will advance the mission of the University. *All other persons or entities are Third Parties and are prohibited from flying UAS on University Property.*

This policy applies to *all flights*, including flights conducted indoors.

### **A. Third Parties:**

Third Parties may not operate UAS on University property. Third parties do not include current University, Medical Center, and College at Wise faculty, staff, employees, students, or approved parties.

### **B. Faculty, Staff, Employees, and Approved Parties:**

This policy applies to faculty, staff, employees, and approved parties operating UAS on or above University property or *on behalf of the University at any location*. For example, the policy applies to faculty, staff, employees, and approved parties who seek to operate UAS for the following purposes:

- Research and development in the pursuit of University duties, whether on or off University property;
- Aerial data collection, including aerial photography, video, surveys, or inspections on behalf of the University, whether on or off University property;
- UAS operations as a part of University courses, or research activities, whether on or off University property; and
- Agreements or other arrangements for approved parties and other persons to fly UAS on behalf of the University (such as for aerial photography, or for any of the reasons above), whether on or off University property.

Faculty, staff, employees, and approved parties may operate UAS *if and only if* the flight is approved in advance by the UAS Operations Manager, the flight is related to the University’s mission or community, and the flight adheres to any limits prescribed by the UAS Operations Manager.

### C. Students:<sup>1</sup>

Students may operate UAS *if and only if*

- a. the flight is approved in advance by the UAS Operations Manager,
- b. the flight is conducted under Part 107 as described in Section 1(b)(ii) of this Policy and relates to the student's education OR the flight is conducted as a model aircraft operation *only in furtherance of a student's education* as described in the FAA's May 4, 2016 [Interpretation of the Educational Use of Unmanned Aircraft Systems](#), and in Section (1)(b)(iv) of this policy; and
- c. the flight adheres to any limits prescribed by the UAS Operations Manager.

#### To Whom This Policy Does Not Apply:

This policy does not apply to anyone operating UAS if the UAS operation is 1) unrelated to University coursework, research, or employment *and* 2) such UAS operation is not on University property.

Additionally, this policy does not apply to UAS operations under [Virginia Code § 19.2-60.1](#), which requires a search warrant for UAS operations by public bodies under certain circumstances.

Questions regarding whether a specific activity or type of agreement is covered under this policy, or other policies and procedures, should be directed to the UAS Operations Manager.

#### 1. Basis for UAS Operation:

##### a. Registration of Aircraft:

All Unmanned Aircraft Systems operated in the National Airspace System are required to be registered with the FAA. This includes civil aircraft, public aircraft, and model aircraft operated for recreational purposes. No flight with an unregistered aircraft will be approved by the UAS Operations Manager.

##### b. Unmanned Aircraft Systems:

UAS can be operated in the National Airspace System pursuant to several different frameworks. Each of these options has different requirements and limitations. It is very important before any UAS operation is undertaken to determine which of these sets of regulations will govern the flight and to ensure that the flight operation can be done legally and safely under those rules. The following are the four categories of UAS operations utilized by the University. Any UAS operation that cannot be performed within one of these four categories is prohibited.

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<sup>1</sup> This section does not apply to Contracted Independent Organizations or other registered student groups.

**i. 333 Exemption:**

The University holds an [Exemption issued by the FAA pursuant to Section 333 of the FAA Modernization and Reform Act of 2012](#). This allows the operation of a UAS as a civil aircraft for aerial data collection. Aerial data collection includes, but is not limited to, any research and development, videography, photography, inspection, surveying, monitoring, or information gathering. The Exemption contains numbered paragraphs setting out all of the limitations, terms, and conditions that govern flight. For example, one condition is that the Remote Pilot in Command must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. In addition, the University was issued a Blanket COA that further defines applicable airspace restrictions. These two documents should be read together and must be strictly complied with. If the flight cannot be conducted under the limitations set forth in the Blanket COA, then an Air Traffic Organization (ATO) COA is required prior to flight.

**ii. Part 107 Operations:**

In 2016 the FAA established a new regulatory framework to permit civil UAS operations, which is codified at 14 C.F.R. Part 107. These regulations establish requirements, procedures and limitations that differ from those set forth in the University's Exemption. In order to qualify as a Part 107 operation, the Remote Pilot in Command must have a Remote Pilot Certificate with a Small UAS Rating. No COA is required for flights conducted under Part 107, but the operator should be aware of the airspace restrictions set forth in the regulations or other state and local requirements that may prohibit a particular flight.

**iii. Public Aircraft COA Operations:**

The University operates some UAS as public aircraft pursuant to public aircraft COAs. Many of the rules and limitations pertaining to operation of civil aircraft under either the 333 Exemption or Part 107 do not apply or are different. These flights must comply with the terms and limitations set forth in each individual COA. Anyone seeking to obtain authorization to fly under a Public COA must be aware that there are several requirements that must be met. First, the aircraft must be owned by a government entity or be the subject of an exclusive use lease of at least 90 days. Second, the flights must be in furtherance of a governmental function. Third, the aircraft cannot be operated for a commercial purpose. Fourth, a public aircraft COA must be

obtained from the FAA.

**iv. Model Aircraft Operations:**

While most of the rules pertaining to the flight of civil and public aircraft do not apply to model aircraft operations, there are strict requirements that must be met for a UAS to be considered a model aircraft:

- (1) the aircraft must be flown strictly for hobby or recreational purposes;
- (2) the aircraft must be operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization;
- (3) the aircraft is limited to not more than 55 pounds unless otherwise certified through a design, construction, inspection, flight test, and operational safety program administered by a community-based organization;
- (4) the aircraft must be operated in a manner that does not interfere with and gives way to any manned aircraft; and
- (5) when flown within 5 miles of an airport or helipad, including but not limited to the Medical Center's helipad, the operator of the aircraft must provide the airport operator and the airport air traffic control tower (when an air traffic facility is located at the airport) with prior notice of the operation (model aircraft operators flying from a permanent location within 5 miles of an airport should establish a mutually-agreed upon operating procedure with the airport operator and the airport air traffic control tower (when an air traffic facility is located at the airport)).

Any flight that is made for business, commercial, or professional purposes does not qualify as a model aircraft operation and must meet the requirements for civil or public aircraft operations. In particular, University, College at Wise, and Medical Center faculty, staff, and employees who fly UAS as part of their job duties or in furtherance of their professional activities do not qualify as model aircraft operators. However, students who are flying a UAS in furtherance of their education do qualify as model aircraft operators. Students are permitted to operate a UAS as a model aircraft operation ***only in furtherance of their education*** as described in the FAA's May 4, 2016 [Interpretation of the Educational Use of Unmanned Aircraft Systems](#). Anyone seeking to fly a model aircraft should read and be familiar with the FAA's [Interpretation of the Special Rule for Model Aircraft](#), which explains what parts of the Federal Aviation Regulations apply to these flights.

## Procedures:

**Establishment of the UAS Operations Manager:** The University's Executive Vice President and Chief Operating Officer will designate the UAS Operations Manager, who will be the lead University official responsible for the administration of this Policy. With the approval of the University's Executive Vice President and Chief Operating Officer, the UAS Operations Manager may delegate his or her authority to other qualified University employees as necessary for particular locations, such as the College at Wise, or for particular situations. Information about the UAS Operations Manager and all designees may be found at <http://www.virginia.edu/vpr/UAS>. The official e-mail address for the UAS Operations Manager and any designees is [uasoperationsmanager@virginia.edu](mailto:uasoperationsmanager@virginia.edu). The UAS Operations Manager shall also determine if there is any University property that is unsuitable for UAS operations under any circumstances and will make a listing of such properties available to Operators upon request. Maps showing restricted areas, including helicopter preferred flight paths around the Medical Center, ("Restricted Areas"), may be found at <http://www.virginia.edu/vpr/UAS>. UAS operations around the Medical Center are specifically prohibited unless authorized in writing by the Chief Operating Officer of the Medical Center or his/her designee.

- 1. Approval for all UAS Operations:** Prior to submitting a Request to Operate, an Operator must review the options available for conducting the flight (e.g., 333 Exemption, Public Aircraft COA, Part 107, or Model Aircraft) and determine which is best suited for the operation. The Request to Operate should contain a concise statement of the justification for this choice. In addition, the Operator should set out all relevant information about how the flight will be conducted, such as date and time of the proposed flight(s), location, maximum altitude, class of airspace, distance from nearest airport or helipad, whether a visual observer will be used, whether a COA is required and has been obtained, etc. The Operator must submit a copy of his or her pilot certificate with the Request to Operate unless the Operator is a student requesting to operate UAS in furtherance of his or her education under Model Aircraft Operations, as described above in Section 1(b)(iv), Model Aircraft Operations. Additionally, every Request to Operate should include a copy of the FAA Registration for the UAS that the Operator would like to operate. The Operator must provide the UAS Operations Manager with a copy of any prior authorization from Air Traffic Control that may be required for the flight. A sample request for permission to operate is attached to this policy as Appendix A, Request to Operate. The Request to Operate form is available at <http://www.virginia.edu/vpr/UAS>.

The Request to Operate shall be submitted by email to the UAS Operations Manager at [uasoperationsmanager@virginia.edu](mailto:uasoperationsmanager@virginia.edu), and the UAS Operations Manager shall attempt to review all requests promptly and will make a determination within 10 business days after a request is submitted.

In reviewing a flight request by an Operator, the UAS Operations Manager will consider the basis for the request, the purpose of the flight, potential conflicts with other UAS flights, potential impact on privacy, safety and ethical considerations, as well as any other matter the UAS Operations Manager determines is relevant to the request under consideration. After reviewing the Request, the UAS Operations Manager will make one of four determinations.



The Request may be approved, rejected, approved with conditions, or returned for additional information. An “approval with conditions” can include any restrictions on the operation that the UAS Operations Manager, at his or her discretion, believes are necessary to help protect public safety. If the Request is returned for additional information, the UAS Operations Manager shall indicate what additional facts or information are necessary for the Request to be reviewed. The Operator may submit any additional information he or she believes is relevant, after which the UAS Operations Manager will issue a determination. The UAS Operations Manager’s determination will be submitted to the Operator by e-mail as a pdf document, titled “Final Determination.” The UAS Operator and Remote Pilot in Command, if different from the UAS Operator, must endorse the Final Determination and sign the Agreement accompanying the Final Determination. An endorsed copy of the Final Determination and an executed copy of the accompanying Agreement must be submitted to the UAS Operations Manager by e-mail at least 72 hours prior to any flight as a condition of approval for the flight. If the UAS Operations Manager does not receive the endorsed Final Determination and executed copy of the accompanying Agreement, the flight is considered unauthorized and in violation of this Policy.

An Operator is required to have a paper copy of the Request to Operate and the UAS Operations Manager’s Final Determination in his or her possession at the time of any approved flight and for the duration of such flight.

**SAMPLE**  
**Appendix A - Request to Operate**

**Name of Person Submitting the Request and affiliation with the University:**

John Doe, Graduate Student

**Date Submitted:**      **January 30, 2017**

**Legal Authority for the Operation:**

14 C.F.R. Part 107. The flights will conform to the operational limitations contained in Part 107, will be conducted with a registered aircraft, which will be flown by a pilot with a remote pilot certificate with a small UAS rating.

**Name of the Remote Pilot in Command and applicable certificate:**

John Smith, Part 107 Remote Pilot Certificate with a Small UAS Rating, Certificate number 8888888

**Time and Place of the Flight(s):**

September 22-24 from 9 AM to 3 PM, Thornton Hall “Quad” 38 01.98’N 78° 30.64’W

**Distance to nearest Airport/helipad and class of airspace: <sup>2</sup> [If flight will be in controlled airspace (Class B, C, D or within the lateral boundaries of the surface area of Class E airspace) supply a copy of the required ATC authorization.]**

Charlottesville-Albemarle Airport, KCHO, 6.4 Nautical Miles, Class D airspace; University of Virginia Medical Center, 8VA5, 0.56 Nautical Miles, Class G airspace.

**Is a COA Required and has it been Obtained (attach a copy):**

None Required

**Purpose of the Flight:**

Conduct a UAS test flight with a UAS created in my engineering course, Course # \_\_\_\_\_.

**Aircraft Make/Model, Type, FAA Registration Certificate Number, Take-off Weight and Maximum Speed**

3D Robotics Solo, quad copter, UAS Certificate Number NXXXXXX, maximum weight 3.9 pounds, maximum speed 55 MPH.

**Flight Profile/Operational limits and Safety Concerns and Mitigations:**

The flight will be conducted entirely within the space defined by the Thornton Hall “Quad”. The maximum altitude for the flight will be 50’ above ground level, at speeds below 10 MPH, and will be conducted based on Visual Line of Sight. A visual observer will be utilized. Prior to

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<sup>2</sup> A flight on UVA Grounds is over 5 miles from the Charlottesville-Albemarle Airport (CHO) but would be very close to the UVA Medical Center Heliport (8VA5), as well as close to a heliport for Virginia State Police on Fontaine Avenue. For flights off-Grounds, consideration must be given to any and all nearby airports and heliports; operators are urged to consult B4UFLY for up-to-date information. A flight on the North Grounds may be within the Class E airspace (to the surface) and would require FAA approval.

flight, the Remote Pilot in Command and visual observer will walk the area to determine if there are any potential hazards to the flight. The Remote Pilot in Command will obtain a weather briefing prior to flight to ensure that VFR meteorological conditions are prevailing during the time of the expected flight. In addition, the FAA’s B4UFLY App will be consulted before flight to ensure there are no temporary flight restrictions in effect at the time of flight.

A return to home point will be designated in advance which will be used if the flight has to be terminated unexpectedly. The Visual Observer will be briefed on procedures to be used to alert the Remote Pilot in Command if any hazard is detected. The Remote Pilot in Command will have the phone numbers of the University of Virginia Medical Center’s Medical Communications Center (“MedCom”) and the Charlottesville-Albemarle Airport at hand prior to flight in order to be able to contact the airport in the event of a lost link or flyaway event. The pilot will call MedCom before taking off and after landing. The aircraft will not be operated directly over any persons or moving vehicles. The flight will be terminated once the aircraft’s battery reaches 20% charge.

**Emergency contact information:** Provide cellular telephone numbers for the Remote Pilot in Command and each designated observer, which can be used to reach the Remote Pilot in Command and each designated observer prior to and during the flight(s).

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#### Determination Regarding Request to Operate

The Request to Operate is:

- Approved
- Rejected
- Approved with the following conditions:
- Returned for the following additional information:

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
UAS Operations Manager

\_\_\_\_\_  
Applicant’s Signature

\_\_\_\_\_  
Applicant’s Printed Name

\_\_\_\_\_  
Parent/Guardian Signature  
(required if applicant is under the age of 18)

\_\_\_\_\_  
Parent/Guardian Name

If applicant differs from Remote Pilot in Command:

\_\_\_\_\_  
Remote Pilot in Command's Signature

\_\_\_\_\_  
Remote Pilot in Command's Printed Name

\_\_\_\_\_  
Remote Pilot in Command's  
Parent/Guardian Signature

\_\_\_\_\_  
Remote Pilot in Command's  
Parent/Guardian Name

(required if Remote Pilot in Command is under the age of 18)