

Dr. Jane Cleland-Huang  
Drone Professor - University of Notre Dame

1. What initially inspired Dr. Jane Cleland-Huang to work with drones?

- A. The idea of building autonomous systems
- B. To teach her students about cyber-physical systems
- C. Personal interest in emergency response missions
- D. To start a company specializing in drone technology

Answer: \_\_\_\_\_

2. Which of the following is a critical factor when programming cyber-physical systems like drones?

- A. Speed
- B. Aesthetic design
- C. Safety
- D. Cost-effectiveness

Answer: \_\_\_\_\_

3. During a demonstration, what task did Dr. Cleland-Huang's team accomplish using drones in collaboration with firefighters?

- A. Rescued a person from a building
- B. Located a firefighter in a river for a rescue drill
- C. Transported medical supplies to a remote location
- D. Extinguished a forest fire

Answer: \_\_\_\_\_

4. What type of drones does Dr. Cleland-Huang's company primarily use for emergency response purposes?

- A. Quadcopters
- B. Hexcopters
- C. Octocopters
- D. Tricopters

Answer: \_\_\_\_\_

5. Why are autonomous drones used in rescue operations potentially risky?

- A. They are expensive to operate
- B. They can fall or malfunction, endangering those they are meant to help
- C. They lack sufficient camera resolution
- D. They require manual operation

Answer: \_\_\_\_\_

6. According to Dr. Cleland-Huang, what regulatory requirement must be met when flying drones in the U.S. under FAA Part 107?

- A. Only one person can fly multiple drones
- B. Flights are limited to daylight hours or require special lighting at dusk
- C. Drones must fly at an altitude above 500 feet
- D. Only certified engineers can operate them

Answer: \_\_\_\_\_

7. Which career path involves writing code to enable drone autonomy and other functions?

- A. Drone Operator
- B. Drone Engineer
- C. Drone Programmer
- D. Drone Technician

Answer: \_\_\_\_\_

**\*\*Written Response Questions\*\***

8. Explain what a cyber-physical system is and describe why safety is particularly important when programming these systems.

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9. Describe a specific example Dr. Cleland-Huang provided of a challenge or unexpected issue her team encountered while working with drones. How did they address or learn from this experience?

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10. In your opinion, what are some potential ethical or safety concerns with increasing drone autonomy in fields like emergency response? Provide at least two examples.

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