



# Drone Technology Advisory Board Meeting Minutes

4/9/2024 | 4:30 PM | L1600, 1687 / Zoom

## Minutes

### LPC Mission Statement

Las Positas College is an inclusive, learning-centered, equity-focused environment that offers educational opportunities and support for completion of students' transfer, degree, and career-technical goals while promoting lifelong learning.

### LPC Planning Priorities

- ❖ Implement the integration of all ACCJC standards throughout campus structure and processes.
- ❖ Establish a knowledge base and an appreciation for equity; create a sense of urgency about moving toward equity; institutionalize equity in decision-making, assessment, and accountability; and build capacity to resolve inequities.
- ❖ Increase student success and completion through change in college practices and processes: coordinating needed academic support, removing barriers, and supporting focused professional development across the campus.
- ❖ Coordinate resources and provide professional development for effective online instruction and remote delivery of student support services and college processes to advance equitable student outcomes.

### Drone Technology Advisory Board Members

\* = *In attendance*

Inez Ayerra  
Greg Bringedahl  
Dan Cearley\*  
Jon Czarnik  
Mathew Hardgrove  
Richard Hassna  
Anne Kennedy\*  
Kevin Kramer  
Vicki Shipman  
Ben Tarquin  
Gabrielle Wright\*

### Guests

Keith Chang\*  
Michael Long\*  
Michael McQuiston\*  
Beth McCormick\*  
Michael Sugi\*  
Mark Yamamoto\*

1. **Call to Order** at 4:32 p.m.
2. **Welcome and Introductions**
3. **Review of Agenda, 4/9/2024**
4. **Review of Previous Minutes, 3/28/2023**
5. **Faculty Report**
  - **Program Updates**
    - NAVI – Noncredit Aviation program was created to meet the need in the industry (CTE). Top areas drones are used for work are construction, agriculture, and insurance claims.
    - Program objectives: skills and safety training, photography/video, aerial mapping, FAA Part 107 Exam preparation.
    - Program goals: integrate with other programs at LPC and expand the program into an AA/AS degree, and build relationships with local industry partners.
    - Dan shared the webpage for [Drone Technology](#) to highlight how our students use drones in the agriculture industry via our Viticulture program.
      - We use a multispectral sensor to isolate different wavelengths and better understand how our plants absorb or reflect infrared light. We have monthly flyovers that we do. We collect 2 spectrums of infrared and 3 visible lights.
      - [Vineyard Ag Surveys](#) | [Vineyard Data Dashboard](#)
    - Courses: NAVI 201 Orientation to Drones, NAVI 202 Mapping, Photography, and Videography, 203 FAA Pilot Certificate Exam Preparation.
      - These are 4–6-week hybrid [courses](#); 201 and 202 have a Saturday hands-on session; all three courses result in a [certificate of completion](#), NAVI – Drone Photography, Mapping, and Piloting.
      - All students who have taken the FAA Part 107 exam have passed!
      - Q: Do you require students to buy the FAA handbook?
      - A: No, not required. Everything in this program is based on accessible material that the FAA has put out; I've taken the FAA handbook and all the examples and all the images and have separated them all out and incorporated them into the series of courses and modules.
      - Discussion: M. Long shared that LVPD signs their pilots up for a self-study program through an outside contractor. While this works, it also costs us ~\$125/person.
        - D. Cearley - This program might be a nice alternative to that because it's repeatable and it's inexpensive (Tuition \$46/unit).
  - Successes: Quick transition from lecture to flying, structured exercises serve as good guides, modality of classes.
  - Challenges: Wide range of abilities, tracking hours, difficult to keep students on task, line of sight ignored, minor crashes (hit a tree), modality in terms of student base and tech knowledge.
  - This is our third year flying and we're doing really good; The campus hasn't received any complaints from the public and there have been no incidents.

- **Enrollments**
  - Our enrollment is doing great and our numbers have steadily increased since Fall 2022. In fact, courses are often over the cap and we have to turn students away.
- **Demographics**
  - 2/3 Men, 1/3 Women
  - 1<sup>st</sup> semester, older adults (30-50+), 2<sup>nd</sup> semester, younger students (<19-21)
- **Completions**
  - 48 total, 88% success rate (Fall 2022) F2F, 57% success rate (Fall 2022) DE
  - 54 total, 85% success rate (Spring 2023) F2F
  - If students weren't successful in their course, it's because they didn't show up; everyone that showed up and did the work, did well and passed.
- **Program Development/Opportunities**
  - **Internship Program**
    - Strong Workforce funded Internship Program - 4 hours/week.
    - Ongoing projects: Viticulture, Campus Tree Survey.
      - Viticulture Project - We fly over the vineyard once a month. We take a data set. We use Pix4D and other programs to process that remote sensing data as multispectral data. Then we work with our Viticulture program to see how that data can be used to manage their vineyard.
      - Dan shared the [Vineyard Data Dashboard](#).
    - New projects: Solar array inspections, infrastructure inspections, LIDAR 3D modeling/landscape maps.
      - Solar Array/Infrastructure Inspections – we have a really good thermal camera that we use for solar array inspections and building envelope inspections to identify heat loss.
      - LIDAR - We have a LIDAR unit that we use for 3D modeling, volumetric changes, and landscape images, and we have an inspection camera; 3-4 different sensor packages that are really high end that our students could benefit from if we build out our program.
  - **Upcoming Curriculum Changes**
    - We will be splitting NAVI 202 Mapping, Photography, and Videography into 202A Photo and Video and 202B Mapping, Remote Sensing, and GIS. This change came from finding that half the students in the NAVI 202 course were interested in photography while the other half were interested in mapping and GIS.
    - In addition to our noncredit courses, we are planning to expand our curriculum to include credit courses. These will be 8 to 16-week semester courses (1 – 3 units) and cover topics such as Remote Sensing/GIS and Videography/Photography.
    - We are going to expand our certificate program to include small business courses because we have found a lot of our students want to own their own small businesses, so they need to develop a business plan, know about how to do accounting and how to do a license etc.
    - Next summer, 2025, we'll have a K-12 course built on computer programming where students are going to program drones to do different kinds of activities and surveys. The hope is to create a pipeline of young students and get them exposed to drones early. We're working with a group that already does this, so we're going to start investing in equipment and materials.

## 6. Industry Updates

- **Hiring Needs**
  - Staffing issues; agencies have the money but don't have the staff with public safety/pilot knowledge so currently bringing back their retirees or bring in a third party to run their full-time pilot programs.
    - Mike McQuiston: The community college is always interested in where the job market is so we can prepare and guide our students – based off this need, is what I am hearing that there is a growing job market for non-sworn paraprofessionals that fly drones for public safety agencies?
    - M. Long: Yes, there's a lot of larger agencies, mainly in Southern California (I've not seen any Northern California) that contract with Flying Lion, Inc. who acts as their pilot and visual observer for their DFR program.
- **Skills in Demand**
  - Drone Photography; visual sensor imagining or real-time thermal imaging skills; crime scene mapping and forensics
    - Re: Thermal Imagining - this is important for law enforcement, the fire department, emergency medical services etc. because we use this to locate individuals faster whether it be a suspect or someone we are looking for on a search and rescue mission. The fire department uses this a lot now for buildings and structure fires to see where heat sources are to plan their rescues.
    - G. Wright recommended we look at Fullerton College's [Drone Program](#) for their TECH 160 Infrared Thermography [course](#). It's a great course and would provide the background knowledge and skills someone in public safety would need should they get called into court to serve as a professional expert.

## 7. Recommendations from Advisory Board

*None at this time*

## 8. Other Business

- M. Long asked Mike McQuiston if Las Positas offers POST certified classes. Mike shared the short answer is no, but we used to; The ACS and the RTC in Dublin is the POST Regional Training Center and used to be accredited through us but now that all of that belongs to our sister campus, Chabot College in Hayward. Having put that out there though, if we can demonstrate that the RTC isn't meeting the need for something then they would allow us to offer a class. In addition, I can share that we have the ability to do instructional service agreements with agencies. Our FST department is working on some of those right now with Livermore and Pleasanton FD.
- M. Long shared there's nobody offering a POST certified drone course or program right now aside from the RTC down in Los Angeles. As drones become more prevalent in law enforcement, they are going to be questioned more on the certification level and when you're in court.
  - Mike McQuiston offered to work with Gabby Wright and Mike Long to help create a POST certified courses related to drone operations.
- Mike McQuiston recommended NAVI 203 course outline be split between flying and studying as opposed to being strictly lecture driven so it doesn't overwhelm students with so much 'heavy' content.
- M. Long shared that Bay Area Tech companies are hiring FAA Part 107 pilots / test pilots at \$100,000 starting; so, this may be a way to get people interested in the program and market it as a jumping off point.
- Dan shared that the most asked question from students is how to get more fly time, and asked the advisory board for their thoughts on this.
  - Request funding for extra drones that students could borrow; sheriff's department may loan out if they are not in use; solicit the lab for donations of older equipment (drones). ACSO may be able to help, and/or PG&E.
  - Create a hands-on evening course that puts students in different scenarios for them to practice skills and get more fly time.
  - Visual observer hours/flying hours.
  - Maybe create an independent study course.

## 9. Next Regular Meeting in Spring 2025

## 10. Adjournment at 6:06 p.m.