UC Merced Integrated Pest Management Plan

The purpose of this Integrated Pest Management (IPM) Plan is to guide the use of environmentally sensitive pest management strategies and least-toxic control methods on land managed and owned by the University of California, Merced (UC Merced).

According to the University of California's Statewide IPM Program, IPM is "an ecosystem-based strategy that focuses on long-term prevention of Pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, such as pollinators, and the environment.[2]

Core elements of IPM include:

- **Pest Prevention**: Proactively reduce pest populations through healthy landscape management, building and site modifications, proper irrigation, and resistant plant varieties.
- **Pest and Symptom Identification**: Accurately identify pests and their symptoms using expert consultation and technology to distinguish between harmful and beneficial organisms.
- **Regular Pest Surveys and Action Thresholds**: Conduct routine monitoring, establish clear thresholds, and apply scientifically based interventions only when necessary.
- **Integrated Pest Management Methods**: Combine biological, cultural, mechanical, and responsible chemical controls to manage pest populations effectively and sustainably.
- **Sustainable and Responsible Pest Control**: Prioritize environmentally friendly strategies, reduce chemical reliance, and ensure pesticide applications align with safety and regulatory guidelines.
- **Pesticide Use**: The application of pesticides within an Integrated Pest Management (IPM) program should only be undertaken after thoroughly assessing the associated risks to human health and the ecosystem. Furthermore, it must be determined, through a comprehensive and meticulous evaluation, that alternative pest management strategies are insufficient in achieving the desired level of control.
- **Pollinator Protection:** UC Merced is a certified Bee Campus. Safeguard bees and other pollinators by avoiding pesticide applications during bloom periods or peak foraging hours and prioritizing pollinator-safe products and methods.

2 UC ANR's IPM definition is available online: https://www2.ipm.ucanr.edu/What-is-IPM/

Scope

This plan provides guidelines for protecting and enhancing the natural diversity of the UC Merced Campus Site, while also supporting high-performance building operations and developing synergies between the buildings and their environmental context. The IPM Plan covers all the University owned buildings and associated grounds.

Exemptions to the UC Presidential Policy on IPM

The UC Presidential Policy on Integrated Pest Management provides two exemptions:

1. Research Use of Pesticides
Pesticides used as part of a scientific experiment are exempt from this Plan. Examples include:
- Applying a pre-emergent herbicide to maintain conventional crop conditions in a study.
- Utilizing a rodenticide in research plots to ensure data collection.
- Applying pesticides in controlled settings (greenhouses, labs, field plots) to study effectiveness, breakdown, or ecological effects.

Researchers are encouraged, but not required, to report pesticide use through the Pesticide Use Authorization (PUA) Platform. Research use must still comply with state/federal regulations (e.g., DPR, EPA) and UC training/notification policies.

2. Use of Antimicrobials
Antimicrobials used for hygienic purposes (disinfecting sprays/wipes, pool treatments, irrigation line algaecides, drinking water treatment, sterilization of medical equipment) are exempt from this Plan.

Responsible Parties

The Integrated Pest Management Coordinator (IPM Coordinator) is responsible for management of the IPM Program. The Integrated Pest Management Committee (IPMC) provides IPM oversight and guidance. Contracts with pest and landscape management vendors shall include extensive language describing their role in implementing the IPM Plan. Contractors providing Pest management services to the University shall carry out their tasks according to this IPM Plan. On occasion, several contractors may be engaged simultaneously in various elements of IPM at the buildings and grounds. To ensure an effective and coordinated effort, the IPM Coordinator is responsible for overseeing the IPM Plan and shall review all proposed activities before implementation.

UCM IPM Coordinator:

- Ernesto “Ernie” Solano
    - 209.201.6596, esolano3@ucmerced.edu

UCM IPM Committee Membership:

- Marília P. Gaiarsa, Assistant Professor, Dept. of Life & Environmental Sciences
- Sahana Veldandi, Life & Environmental Sciences
- Michael Puckett, Campus Health Program Manager, EH&S
- Steve Costa, Director of Auxiliary Facilities Services, Auxiliaries
- Cesar Ramirez, Environment Compliance Manager, EH&S
- Kai Wildberger, Student Representative
- Marcos Pena, Grounds Supervisor, Facilities
- Ernie Solano, Campus Services Supervisor, Facilities
- Cindi Zimmerman, Risk Manager, Office of the Chancellor
- David Dunham, Executive Director of Recreation & Athletics
- Adam Malisch, Conservation Easement and Natural Resource Land Manager Capital & Land Use Planning, POPD
- Daniel Royer, ESF Coordinator, Valley Institute for Sustainability, Technology, & Agriculture
- Andrea Joyce, Associate Professor, Public Health
- Danielle Waite, Director ECEC
- Jonathan Lampman, AVC Facilities

IPM Coordinator will:

- Serve as primary contact for pest management issues and inquiries.
- Coordinate and ensure facilitation of all IPM Plan activities.
- Review, refine, and implement IPM processes in alignment with UC policy and regulatory requirements.
- Communicate with the UC Systemwide Pesticide Oversight Committee (SPOC) as needed.
- Coordinate education and outreach activities with the campus community.
- Maintain records of PUAs, pesticide applications, and program evaluations.

IPM Committee (IPMC) will:

Certified Applicator Representation

In compliance with the UC Presidential Policy, the UC Merced IPM Committee includes at least one Certified/Licensed Pesticide Applicator. This member provides technical oversight of pesticide use, ensures alignment with state regulations, and advises the committee on safe and effective practices.

- Review and approve PUA requests in accordance with this Plan.
- Review and submit IPM summary reports to the SPOC as required.
- Participate in annual evaluation of IPM Plan performance.

- Recommend continuous improvements, policy changes, and best practices.
- Ensure representation of faculty, staff, students, and stakeholders.

Performance Metric

This IPM Plan shall govern all components of pest management at the UC Merced Campus site. The practices identified in this Plan shall be wholly adopted and used 100 percent of the pest management scenarios at all buildings located at the UC Merced Campus and satellite locations, except for the Experimental Smart Farm and Campus Lands, which are governed by independent plans.

- Eliminate use of all red-tier pesticides, except in emergencies approved by the IPMC.
- Achieve **zero tolerance** for rodents, cockroaches, and bed bugs in occupied buildings.
- Reduce reliance on yellow-tier pesticides by **10% over the next 3 years**.
- Maintain **100% compliance** with PUA requirements for all pesticide applications.
- Promote biodiversity and pollinator habitat by managing invasive species in habitat and conservation areas.

IPM Strategies and Practices

Integrated Methods

Integrated methods that make use of monitoring and non-toxic preventative measures (e.g., site inspection and maintenance, cultural controls, pest inspection and population monitoring) will be used to proactively manage and minimize pest issues. Elimination of food, water and shelter sources that attract pests to the interior and exterior of buildings will be used first as a non-chemical control of pests. If monitoring activities reveal a need for the use of pest controls, appropriate control options will be evaluated, and the least toxic option likely to be effective will be employed.

Systemwide PUA Platform

All pesticide use at UC Merced must be authorized and reported through the systemwide Pesticide Use Authorization (PUA) Platform provided by the UC Office of the President, Office of Risk Services. This ensures consistency with UC systemwide reporting, recordkeeping, and hazard-tier integration requirements.

Pesticide Use Authorizations (PUAs):

When the decision to use Pesticides is made, the Pesticide(s) selected should be:

- effective;

- target specific;
- not known to be harmful to non-target species such as beneficial organisms, wildlife, or aquatic species;
- not known to contaminate surface or groundwater; and
- least hazardous to humans.

All Pesticide applications at UC Locations must be requested through the PUA Platform by the Pesticide Handler, Certified/Licensed Pesticide Applicator, or the Application Supervisor and receive approval prior to use.

In addition to data needed for state and local Pesticide use reporting requirements, information required on the PUA form may include but may not be limited to:

- Product name and active ingredient;
- EPA Registration Number;
- Target Pest;
- Date of proposed Pesticide use;
- Area to be treated;
- The Pesticide application method; and
- Any additional information needed to evaluate the overall exposure risk.
- Additionally, any Emergency PUA applications must be clearly identified.

PUA Types:

Automatic PUA:
An Automatic PUA can only authorize the use of green- or yellow-tier Pesticides for purposes that the IPMC has predetermined do not require additional review and approval.

Generic PUA:
A Generic PUA authorizes the use of Pesticides that pose little to no risk of exposure to the Pesticide or for certain Pest control cases common to the UC Location in which non-chemical treatment options have been unsuccessful.
A Generic PUA must establish limitations on the use of the Pesticide by setting general parameters as required by the particular use cases it is intended to approve (e.g., target Pest(s), application location(s), the application method(s),number of applications, etc.).
A Generic PUA must not be granted for longer than 1 year, but it may be renewed by the IPMC after an annual review.

Specific PUA:
A Specific PUA must establish limitations on Pesticide use by setting explicit parameters as required by the particular case(e.g., type of pest to be treated, application location, application method, number of applications, defined period of application(s),etc.).

A Specific PUA must not be approved to extend beyond the successful resolution of the case identified in the original request.

Emergency PUA:
An Emergency PUA must apply only to a Pest Emergency for which the Pesticide treatment cannot be planned more than three (3) days in advance.
The IPMC may allow the IPM Coordinator to approve Emergency PUAs without prior review by the IPMC.
The PUA must be updated after the resolution of the case to include detailed information about the situation and proposed future prevention measures. This information must be submitted to the IPMC for review.

Exceptions to Automatic PUAs
At UC Merced, the following uses of green- and yellow-tier pesticides **require additional review** and may not be automatically approved:

- Applications near childcare facilities, dining areas, or student housing.
- Applications adjacent to riparian habitat or sensitive species areas.
- Indoor applications involving aerosolized or fogging methods.

Examples of Generic PUAs (UC Merced)

- Ant bait stations in occupied buildings when non-chemical controls fail.
- Yellow-jacket traps at athletic fields during high-use periods.

Examples of Specific PUAs (UC Merced)

- Termite treatment in structural buildings using approved low-toxicity products.
- Invasive weed eradication (e.g., Yellow Starthistle) in habitat areas.

Pest Emergencies
An emergency is defined as a situation where immediate pesticide treatment is necessary to prevent harm to public health, the environment, or University assets.

- **Authority to Declare an Emergency**: The IPM Coordinator, in consultation with EH&S, may declare an emergency. If unavailable, the Director of Facilities Management may exercise this authority.
- **Decision-Making Process**: Alternatives will be rapidly evaluated; pesticides will only be used if non-chemical options are not feasible.
- **Post-Emergency Review**: Within 30 days of the event, the IPMC will review the emergency use, evaluate appropriateness, and recommend preventive measures to avoid recurrence.

PUA Approval:

Green-tier Pesticides:
Green-tier Pesticides are eligible for automatic PUA approval by default. This default stance can be overridden by specific limitations or requirements as determined by each UC Location's IPMC and documented in the local IPM Plan.

Unless otherwise specified in the IPM Plan, pre-approval for the use of green-tier Pesticides will be granted without requiring additional review and approval, which will result in an Automatic PUA.
The IPMC may restrict the approval for use of green-tier Pesticides to require additional review, which would result in a Generic, Specific, or Emergency PUA.
Applicators must at least be Pesticide Handlers to apply green-tier pesticides.

Yellow-tier Pesticides:
Use of yellow-tier Pesticides will be subject to the limitations of review, approval, and use as determined by each UC location's IPMC and documented in the local IPM Plan.
The IPMC may document in the IPM Plan pre-approval for using yellow-tier Pesticides without requiring additional review and approval, resulting in an Automatic PUA.
The IPMC may restrict the approval for using yellow-tier Pesticides to require additional review, resulting in a Generic, Specific, or Emergency PUA.
Applicators must at least be Pesticide Handlers to apply yellow-tier pesticides, and the application must be conducted under the supervision of a Certified/Licensed Pesticide Applicator.

Red-tier Pesticides:
All red-tier Pesticides are prohibited unless permitted for use only after the location's IPMC has directly reviewed and approved its PUA application prior to use.
The IPMC may approve the use of a PUA for a red-tier Pesticide only if the benefits achieved from the use of the Pesticide outweigh the identified potential or known risks (considering the availability of feasible, safer alternatives).
Red-tier Pesticides must be applied only by a Certified/Licensed Pesticide Applicator or by Pesticide Handlers under the physical presence supervision of a Certified/Licensed Pesticide Applicator. Red-tier pesticides should not be applied to blooming plants in order to protect pollinators.

Communication with the Campus Community

Effective communication is vital for the success of the Integrated Pest Management (IPM) program. This section outlines the methods used to inform students, faculty, staff, and visitors about IPM practices, activities, and any necessary pesticide applications. Our goal is to foster understanding, cooperation, and minimize concerns through transparent and timely communication.

1. Digital Communication Channels:

IPM Website: A dedicated section within the university's website will serve as the primary source for IPM information. This site will feature:

- The University's IPM policy and objectives.
- Contact information for the IPM Coordinator and other relevant personnel.
- Educational resources on pest prevention, sanitation, and reporting pest sightings.
- Links to relevant external resources (e.g., EPA, state/local health departments, university extension services).

Work Order System: The university's online work order system will be used for:

- Submitting pest-related service requests.
- Tracking the status of service requests.
- Providing updates to individuals who have submitted requests.
- Generating reports on pest issues and service responses, which can inform communication strategies.

Email Notifications:

- General IPM updates and announcements may be distributed through university-wide email or listservs, as appropriate.

2. Physical Communication:

Signage (Postings):

a. Pre-Application Notification: When pesticide application is determined to be necessary—after all other IPM measures have been considered and ruled out—clearly visible signage will be posted at all entrances and prominent access points to the treatment area. This posting must occur before the application begins but no more than 24 hours in advance, and signage shall remain in place for 72 hours after application or until any applicable restricted entry interval (REI) has ended, whichever is longer.

b. Emergency Applications: In the case of an Emergency Pesticide Use Application (PUA), signage must be posted as soon as reasonably possible, but no later than at the time of application, and must remain in place for the same period described above.

c. Signage Content Requirements:

- Each sign will clearly display the following information in accordance with UC IPM Policy:
- Product name and active ingredient;
- EPA registration number;
- Target pest;
- Date of the proposed pesticide use;
- Specific area to be treated;
- Signal word indicating the pesticide’s toxicity category (e.g., CAUTION, WARNING, DANGER);
- SPOC hazard tier rating of the pesticide (if available);
- UC contact information (typically the IPM Coordinator or designated point of contact);
- Location of additional information available from the Integrated Pest Management Committee (IPMC), such as Safety Data Sheets (SDS) or fact sheets.

d. Legal and Policy Compliance:

- All postings will comply with existing laws and regulations, including those governing pesticide use in schools, childcare facilities, rental housing, and agricultural sites. California Code of Regulations, Title 3, § 6776 and any applicable out-of-state regulations must also be followed if the property is outside of California.

Communication with Pest Management Contractors

- Regular scheduled meetings to discuss pest control strategies and updates.
- A shared digital platform for real-time reporting of pest issues and treatments.
- Emergency contact protocols for urgent pest control needs.
- Standardized reporting forms for contractors to document pest activity and treatment outcomes.

Contractor Compliance with PUA Platform

All pest management contractors must comply with the UC Presidential Policy on IPM and this IPM Plan. Contractors are required to:

- Submit PUA requests directly through the UC systemwide PUA Platform (or coordinate with the UC Merced IPM Coordinator if they do not have direct access).
- Report all pesticide applications into the PUA Platform within 24 hours of completion.
- Provide monthly activity and compliance reports to the IPM Coordinator.
- Attend annual contractor review meetings with the IPMC.

Recordkeeping

Recordkeeping is required to demonstrate ongoing compliance with the IPM Plan. All applications of pesticides (including the least toxic options) shall be logged. The pesticide application log shall include the following information:

- Universal notification to occupants, if required
- Date
- Time
- Method
- Pesticide application date and time
- Application technician or manager
- Location
- Target pest
- Pesticide trade name
- Pesticide active ingredient
- EPA registration number
- Least toxic status (Y/N)

Cleaning and Sanitation Practices

Cleaning and sanitation are critical components of pest prevention. Facilities Management and contracted custodial staff will implement practices that reduce food, water, and harborage sources for pests. Cleaning products and procedures will comply with UC Merced's sustainability standards (e.g., LEED-EBOM criteria) and be reviewed annually in coordination with the IPM Coordinator and EH&S.
Sanitation practices directly support IPM goals by limiting pest attractants and creating healthier building environments.

Animal & Vegetation Pest Control IPM Best Practices

The best environmental practices described below are incorporated into vendor contracts / Standard Operating Procedure language as appropriate. The control of pests (invasive plants, fungi, insects, animals) is a critical function at this site, as is the environmental and health effects of misuse or overuse of toxic chemical pesticides. This pest control program outlines the most effective, lowest risk options for controlling pests. The guiding principle of this policy is to use non-chemical practices whenever possible; reduce threats to sensitive plant and animal species, including threatened and endangered species; use the least toxic chemical pesticide that serves a particular need; the minimal use of chemicals; use of chemicals in carefully targeted locations; and use only for targeted pest species; blanket spraying should be avoided when natives are in bloom. This plan is integrated with the indoor portion of the IPM Plan and follows many of the same guidelines.

Chemical Storage and Handling

All pesticides and pest control products must be:
- Stored securely in designated areas that are dry, ventilated, and locked.
- Clearly labeled with manufacturer instructions and safety data sheets (SDS) available.
- Segregated to prevent cross-contamination and minimize environmental risk.

The IPM Coordinator and EH&S will ensure compliance with applicable state/federal regulations for pesticide storage and use.

Chemical Application

Applications must follow manufacturer label instructions, UC IPM hazard tiering guidelines, and state licensing requirements. Staff and contractors must use proper personal protective equipment (PPE) and apply only the minimum necessary amount to achieve control.
Applications will be scheduled to minimize occupant exposure and reentry will follow restricted-entry interval (REI) requirements.

Disposal

Unused pesticides, empty containers, and related waste will be disposed of through UC Merced's hazardous waste management program in compliance with California Department of Pesticide Regulation (DPR), California Department of Toxic Substances Control (DTSC), and local requirements. Contractors must use authorized disposal methods and document compliance in reports submitted to the IPM Coordinator.

Storage Areas

- Storage areas must be dry, frost free, well-ventilated and secure.
- Storage areas must be situated away from other buildings, especially residential buildings or areas where food or flammable materials are stored.
- Storage must be built to resist foreseeable accidents, including leakage and spillage, fires and the weather. Ensure there is no risk of spills polluting ground water and local bodies of water.
- Floors must be impervious to liquids, anti-slip, chemical resistant, washable and with a means of diverting spills.
- Drains must lead to sumps or tanks large enough to contain any foreseeable leaks.
- Shelving must be appropriate for the size of the containers stored in them.
- Flammable pesticides must be separated from other pesticides.
- Consideration must be given to possible reactions between chemicals meeting each other.

Labels

Make sure all pest control chemicals are clearly labeled stored with the manufacturers' instructions for use.

Chemicals must never be placed in unmarked containers.

Product Information

Effective first aid provisions must be available together with data sheets on all the products in the storage room and the chemical safety precautions.

Emergency telephone numbers must be listed in a key location in the storage facility. These numbers and other emergency facilities must be checked and updated as necessary.

Signage

Display hazardous chemical storage warning signs at all storage locations without attracting unwanted attention.

Chemical Preparation and Handling Practices

Choosing Chemicals

Identify which pesticides and herbicides are being used and the exact problems they are intended to resolve. The more that is known about the problem, the less chance there is of making a mistake. The words organic, natural and biodegradable in this context do not guarantee that they are safe.

Mixing Chemicals

Accurate measurements must be made during both mixing and application phases. Use the most suitable chemical, in the minimum necessary amount, to achieve the desired results.

A safe area must be available for mixing pesticides. This must be done on a concrete pad, with a separate sump or tank to contain any leakage.

Health Precautions

Operators must be provided with and adequately trained in the use of the necessary equipment and protective clothing.

Proper health surveillance must be available to all those working with pesticides and herbicides.

Neighbors and others in the area must be warned of the spraying program in advance of and during applications.

Chemical Transport

Only the quantity of pesticide and herbicide appropriate for immediate use may be removed from the pesticide store.

Do not transport chemicals in vehicles used for carrying people or food.

Training Requirements

All UC Merced pesticide handlers must complete Systemwide Pesticide Oversight Committee (SPOC)–approved pesticide handler training annually. In addition, the use of yellow- and red-tier pesticides must be performed under the direct supervision of a Certified/Licensed Pesticide Applicator. Training and certification records will be maintained by the IPM Coordinator and EH&S.

Chemical Application Process

Species Considerations

Time the treatment to coincide with the presence of the pest.

Use a selective chemical that has the least effect on non-target species and treat only the area affected.

User Safety

Users must wear protective clothing and headgear and are to change clothing and wash thoroughly with soap and water after applying pest control chemicals.

Ensure that anyone handling toxic chemicals never works alone and that the work area is well-ventilated.

Users must wear respirators for all outdoor spraying or dusting of organic phosphorus compounds.

Eating, drinking and smoking must be prohibited while using or handling chemicals.

Users must be familiar with the effects on the body of the chemicals they are likely to be using and how those chemicals may enter the body.

Users must be aware of the signs and symptoms of acute poisoning related to chemicals they are using. If signs, symptoms or other illnesses develop, users are to discontinue work and seek medical attention.

Limited Access

The area of application must be clearly marked and unnecessary access restricted while spraying is in progress.

Building occupants must receive notification of any pest control management measures prior to implementation. When application or spraying is in progress, building occupants must be notified and kept away from the area in which it is taking place.

Following application of chemicals, control the reentry of people into the treated area for the period specified by the IPM specialist.

Equipment

To minimize spray drift and potential threats to users' health and safety, equipment must receive regular inspections and maintenance in accordance with manufacturers' specifications.

Weather/Time Restrictions

Spraying must not be carried out in wet, windy or otherwise unsuitable weather. Anyone operating sprayers must have access to a wind-speed meter and only spray when wind speed and precipitation are negligible.

When possible, avoid pesticide applications when pollinators are most active (typically between 8 a.m. and 5 p.m.). Do not apply pesticides on or near blooming plants.

Hours of chemical application must be scheduled so that building occupants are not exposed to hazardous chemicals.

Chemical Disposal Practices

Conditions of Disposal

As most pesticides and herbicides are extremely toxic, proper disposal of unused chemicals is paramount to maintaining the health of building occupants and the safety of the environment. Disposal methods will vary, depending on:

- Quantity of waste for disposal
- Chemical and biological degradability of the active ingredients
- Toxic properties
- Concentration
- Physical form of waste
- Disposal options available

General Guidelines

Always follow the manufacturers' and/or suppliers' instructions, even when disposing of empty containers.

Landfilling or incinerating pesticides and herbicides is not permitted. Segregate pesticide/herbicide wastes from general building wastes.

Containers/Labels

Never transfer pesticides to unlabeled or mislabeled containers. Keep all chemicals in clearly labeled containers until the disposal procedure is complete.

Do not reuse pesticide/herbicide containers.

Puncture all containers after initial use to prevent reuse.

Authorization

Use an authorized waste disposal contractor. Use an authorized disposal site.

Basic Vegetation Pest Control Practices

Maintenance

Always keep the building grounds well-maintained.

Maintenance personnel should maintain an even and uniformly distributed layer of weed preventing mulch to plant beds.

Plantings

Avoid monocultures by mixing plant species in planters and gardens, according to the approved landscaping plan. Planting and maintenance practices should prioritize pollinator habitats by incorporating native flowering plants, avoiding monocultures, and minimizing the use of herbicides on flowering plants, especially when they are in bloom.

Manual Controls

Landscaping shall be hand-weeded, or with mechanical tools (e.g., weed eater). Chemical control of vegetation shall be kept to a minimum.

Chemical Controls

When chemical use is necessary, replace hazardous substances with least toxic chemicals as specified in the UC Pesticide Hazard Tiering System.

Inspection Schedule and Location

The groundskeepers shall visit the site at regular intervals to monitor and apply vegetation pest control operations.

Basic Animal Pest Control Practices

Site Cleanliness

Keep refuse containers clean, free of odors and always covered. Empty refuse, recycling and compost containers routinely.

Keep areas around refuse containers free of spillage and prevent the accumulation of trash or debris on the ground around or underneath the containers.

Keep the grounds free of high weeds, trash, old equipment and debris.

Reduce clutter and minimize outdoor storage of items not kept in sealed containers (e.g., furniture, etc.)

Structural Integrity

Keep all exterior doors closed, do not prop open. Promptly address exterior doors that aren’t closing (e.g., airflow, closure adjustment, etc.)

Maintain the building envelope in good repair with no holes or openings larger than ¼ inch. Pay special attention to areas surrounding windows, doors, fans, vents, etc.

Address any deficiencies in the building envelope with corrective measures. Install or replace weatherstripping and doors and windows; repair or replace screens; cement, caulk or patch holes or cracks in finishes as necessary.

When possible, install bird deterrents, such as netting.

Maintain door sweeps and weather stripping on all exterior doors.

Maintain window screens on all exterior operable windows.

Pests in the Functional Areas

Site Cleanliness

Keep refuse containers clean, free of odors and always covered. Empty refuse, recycling and compost containers routinely.

Keep areas around refuse containers free of spillage and prevent the accumulation of trash or debris on the ground around or underneath the containers.

Keep the grounds free of high weeds, trash, old equipment and debris.

Reduce clutter and minimize outdoor storage of items not kept in sealed containers (e.g., furniture, etc.)

Unanticipated Pests

When pests not listed in this Plan are encountered:

1. The pest will be identified using UC IPM Pest Management Guidelines, Quick Notes, or peer-reviewed sources.
2. Damage potential will be assessed in relation to human health, operations, or ecological balance.
3. Action thresholds will be defined by the IPM Coordinator and reviewed by the IPMC.
4. Treatment methods will be selected using the same hierarchy as this Plan (prevention, cultural/biological, least-toxic pesticides).
5. If pesticide use is required, authorization will follow Automatic, Generic, or Specific PUA procedures.
6. Findings will be reviewed annually and incorporated into updated versions of this IPM Plan.

Program Evaluation and Improvement

The UC Merced IPM Program will undergo an annual review coordinated by the IPM Coordinator and IPMC. Evaluation will include:

- Metrics:
  - Number of pest complaints per functional area.
  - Quantity and type of pesticides used (by tier).
  - % of PUAs reviewed and approved within compliance timeframes.
  - Stakeholder satisfaction (via annual survey).
- Reporting: Results will be reported to the UC Systemwide Pesticide Oversight Committee (SPOC) and summarized on the UC Merced IPM website.
- Continuous Improvement: Findings will inform revisions to thresholds, treatment protocols, and outreach strategies. Updates will be incorporated into the IPM Plan annually.

Related Information:

Bee City USA

California Department of Food and Agriculture

California Department of Fish and Wildlife

California Department of Pesticide Regulation

IPM Plan for the California Academy of Sciences

San Francisco Environment Department

UC IPM

UCOP IPM Policy

U.S. Department of Agriculture

U.S. Environmental Protection Agency

Definitions:

Adaptive Management: An intentional approach to making decisions and adjustments in response to new information and changes in context.1

Antimicrobial: A Pesticide intended to disinfect, sanitize, reduce, or mitigate growth or development of microbiological organisms or protect inanimate objects, industrial processes or systems, surfaces, water, or other chemical substances from contamination, fouling, or deterioration caused by bacteria, viruses, fungi, protozoa, algae, or slime.

Application Supervisor: A UC employee who exercises primary direction and control over the activities of a Certified/Licensed Pesticide Applicator or Pesticide Handler and is responsible for executing any Pest control procedure, including compliance with applicable local, state, and federal laws and regulations and this Policy. This designation of "supervisor" will not be used as a basis for exclusion from a bargaining unit.

California Department of Consumer Affairs Structural Pest Control Board (SPCB): The regulatory body tasked with overseeing and licensing structural Pest control applicators operating within California, focusing on professionals employing Pesticides to manage termites and Pests in building and structures.

California Department of Pesticide Regulation (DPR): The regulatory authority responsible for the supervision and licensure of Pesticide applicators in California, ensuring compliance with relevant state Pesticide statues and regulations.

Certified/Licensed Pesticide Applicator: Any individual (whether UC employee or Contractor) who has been certified through an examination administered by the state Pesticide lead agency (e.g., SPCB or DPR) to use or supervise the use of Pesticides.

Contract: A binding written agreement to acquire the services of an outside provider for activities such as grounds maintenance or any Pest control-related services or services that may include Pest control activities.

Contracted Pest Management Companies (Contractors): A person, firm, corporation, or other entity, including a governmental entity, that enters into a Contract with a UC Location to provide Pest management services.

Emergency: A situation where immediate Pesticide treatment is necessary to prevent harm from a Pest to public health, the environment, or University assets.

Integrated Pest Management (IPM): According to the University of California's Statewide IPM Program, IPM is "an ecosystem-based strategy that focuses on long-term prevention of Pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment."

Integrated Pest Management Committee (IPMC): The committee at each UC Location that responsible for providing IPM oversight and guidance for that location.

Integrated Pest Management Coordinator (IPM Coordinator): A designated employee at each UC Location who serves as the primary point of contact between the local IPMC and the SPOC and will manage the IPM program for their location.

Integrated Pest Management Plan (IPM Plan): The plan developed at each UC Location that details Pest prevention and mitigation processes, including Pesticide use and reporting (outlined below in the Procedures section).

Integrated Pest Management Program (IPM Program): The collection of activities at a UC Location used to manage Pests. The IPM program includes the IPMC, IPM Coordinator, and the IPM Plan.

Pest: Any animal, plant, fungi, bacteria, or virus that interfere with site-specific purposes, operations, or management objectives or that jeopardize human health or safety except for viruses, fungi, bacteria, or other microorganisms on or in living human or other living animals.

Pesticide: Any substance or mixture of substances intended to be used for preventing, destroying, repelling, or mitigating any Pest (such as fungi, bacteria, virus, plant, or animal); defoliating plants; regulating plant growth; and any spray adjuvant, as detailed in California Food and Agriculture Code Section 12753. In California, this term includes acaricide, algicide, bactericide, insecticide, fungicide, rodenticide, herbicide, plant growth regulator, defoliant, desiccant, and adjuvant.

Pesticide Handler: For the purposes of this Policy, a UC employee that mixes, loads, measures, and applies Pesticides; is present in an area where a Pesticide application is being conducted to assist with the application; cleans Pesticide application equipment; enters Pesticide storage areas; transports Pesticide containers that have already been opened. Under this Policy, all Pesticide Handlers must be trained through a SPOC-approved Pesticide Handler training course. It is important to note that Pesticide Handlers may routinely apply Pesticides.

Pesticide Hazard Tier List: A list maintained by the SPOC of all Pesticides in use at UC that have been evaluated through the Pesticide Hazard Tiering System

Pesticide Hazard Tiering System: A process developed and maintained by the SPOC for assessing the hazards of each Pesticide used at UC based on its toxicological and environmental attributes to classify them into three distinct tiers: red (high-risk), yellow (medium-risk), and green (low-risk) Pesticides.

Pesticide Use Authorization (PUA): Formal authorization provided by a local IPMC to apply a Pesticide at a UC Location. The authorization may be:

- **Automatic:** to authorize the use of green- or yellow-tier Pesticides for purposes that the IPMC has predetermined do not require additional review and approval.

Systemwide PUA Platform

All pesticide use at UC Merced must be authorized and reported through the systemwide Pesticide Use Authorization (PUA) Platform provided by the UC Office of the President, Office of Risk Services. This ensures consistency with UC systemwide reporting, recordkeeping, and hazard-tier integration requirements.

- **Generic:** to authorize the use of any Pesticide within predefined general parameters for no longer than one (1) year without additional review and approval by the IPMC.
- **Specific:** to authorize the use of any Pesticide within explicit parameters as required to address only the particular Pest situation identified in the original request.

- **Emergency:** to authorize the use of any Pesticide after review and approval by the IPM Coordinator only when immediate Pesticide treatment is necessary to prevent harm to public health or significant damage to the environment or University assets.

Pesticide Use Authorization Platform (PUA Platform): A resource developed for systemwide use where Pesticide Handlers, Certified/Licensed Pesticide Applicators or Application Supervisors must request and receive approval for

proposed Pesticide use and must report Pesticide use after completion of an application. This solution integrates the Pesticide Hazard Tiering System.

Registration Number: A unique identifier that is required by the United States (U.S.) Environmental Protection Agency (EPA) to be located on the front panel of a Pesticide label. This number identifies the individual product and the company that is the primary registrant of that product with the U.S. EPA.

Research Use: Pesticide used as an evaluated treatment in a study or as part of the research design, which is exempt from this Policy.

Systemwide Pesticide Oversight Committee (SPOC): The systemwide committee that provides overall coordination and oversight of UC's Pest management practices and is responsible for maintaining this IPM Policy.

University of California Location (UC Location): All University of California campuses, health locations, Lawrence Berkeley National Laboratory (LBNL), Agriculture and Natural Resources (ANR), Natural Reserve System (NRS), and any other UC-owned or -operated facilities, including arrangements in which UC is either the lessor or lessee, with the exception of privately-owned residences on UC property, as referred to above in the Scope.

UC Merced - Buildings and Sites

Science and Engineering 1
Science and Engineering 2
Central Plant
Pump House
Hazmat

Telecomm Building
Classroom and Office 1
Classroom and Office 2
Social Science and Management
Student Services Building
Early Childhood Education Center
Kolligian Library
Trailer Town
Police Trailer
Academic Office Annex
Facilities Support Building

Administration Building
Arts and Computational Sciences

Bellevue Loading Dock
Biomedical Sciences and Physics
Conference Center
El Portal
Glacier Point
Granite Pass
Greenhouse
Health and Athletic Center
Sentinel Rock
Sustainability Research and Engineering

Student Activities & Athletics Center
Tenaya Hall
Cathedral Hall
The Summits - Half Dome
Future - Promise Housing
Future - Field Education and Research Center
Future - Medical Education Building
Future - Classroom and Office 3

Off Campus:

Wawona - Bruce Cabin
Wawona - Dull House
Wawona - Joyce House
Wawona - Landsneas House
Wawona - Learning Center/Classroom

Wawona - Livingston House
Wawona - Research Station

Wawona - River Road House
Wawona - Vincent House
Downtown Campus Center
Castle 1200
Castle 1201
O St Warehouse
University House
Fresno Center
Buckhorn Flat Ranch

The Pavilion
Calaveras Hall
Terrace Center
Tulare Hall
Madera Hall

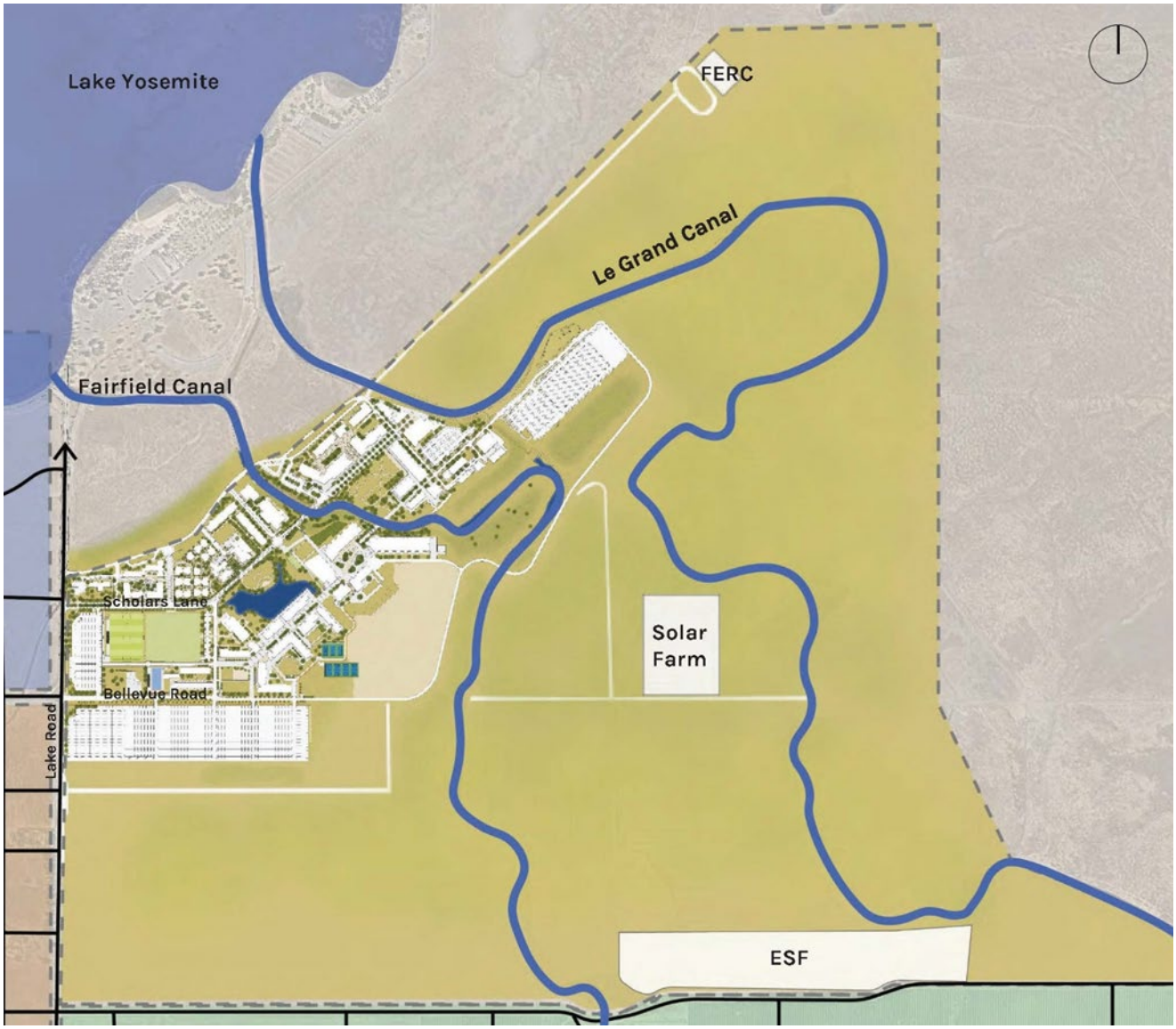
Stanislaus Hall
Kern Hall
Kings Hall
Fresno Hall
San Joaquin Hall
Merced Hall
Valley Terraces Dining
Recreation & Wellness Center
Sierra Terraces - Mariposa
Sierra Terraces - Tuolumne

Locations with Specific IPM Plans:

Experimental Smart Farm

Campus Lands and Open Space

UC Merced Campus Map and Boundaries



UCM List of Potential Pests

UCM references UC IPM for monitoring and managing pests

Insects & Arthropods

Ants
Bed Bugs
Cockroaches
Flies
Fleas
Head Lice
Mosquitos
Spiders
Termites
Wasps

Aquatic Invasives

Bullfrogs
Cattails
Crayfish - nonnatives
Mosquitofish
Mosquitos

Weeds & Unwanted Plants

Barb Goatgrass
Burning & Stinging Nettles
Clover
Giant Reed
Italian Thistle
Medusahead
Milk Thistle
Mistletoe
Pia
Plantain
Prickly Lettuce
Russian Thistle
Stinknet
Wild Blackberries
Yellow Starthistle

Vertebrate Pests

Beavers
Canadian Geese
Coyotes
Deer Mouse
Feral Cats
Gophers
House Mouse
Moles
Raccoons
Rats
Rattlesnakes
Skunks
Squirrels
Wild pigs

FACILITIES MANAGEMENT
UCMERCED

Notification of Pesticide Application

1. Product name and active ingredient:

2. EPA registration number:

3. Target pest:

4. Date of proposed pesticide use:

5. Area(s) to be treated:

6. Re-entry time:

7. Signal word indicating the toxicity category of the pesticide:

8. The Systemwide Pest Oversight Committee (SPOC) hazard tier rating of the pesticide:

9. UC contact details for more information:

10. The location of additional information available from the Integrated Pest Management Committee (IPMC):

Facilities website: https://facilities.ucmerced.edu/integrated-pest-management
FM Help Desk contact: 209.228.2986
fmhelp@ucmerced.edu

Link to fillable PDF

Pesticide Use Authorization (PUA) Approval Matrix

This table was created by the UC Systemwide Pesticide Oversight Committee as a supplement to the proposed Presidential Policy on Integrated Pest Management (IPM). Please direct any questions to ehs@ucop.edu.

PUA Type	Description	Integrated Pest Management Committee (IPMC) Review	PUA Approval Time	Eligible Tiers		
				Green	Yellow	Red
Automatic	Preferred when the IPMC wants no oversight of the pesticide use other than a one-time designation to permit this use in the local Integrated Pest Management (IPM) Plan.	Once - only a one-time decision to include the approval in the IPM Plan.	Instantaneous	Y[1]	Y[2]	N
Generic	Allows for automated PUA approval in the PUA Platform. The template has general parameters of use.	Annually - IMPC reviews and approves on an annual basis.	Instantaneous	Y	Y	Y[3]
Specific	Requires explicit parameters necessitated by the particular case. Multiple treatments can be performed over time under a single Specific PUA.	Each Specific PUA is approved separately by the IPMC.	Days - Weeks	Y	Y	Y - Required[3]
Emergency	A pest emergency is one in which the pesticide treatment cannot be planned more than 3 days in advance.	Initial review can be performed by the IPM Coordinator. Post application reviewed by the IPMC.	Hours - Days	Y[4]	Y[4]	Y[4]

1. Green-tiered pesticides, by default, are eligible for an Automatic PUA unless the IPMC decides differently.
2. An Automatic PUA is allowed for Yellow-tiered pesticides if approved by the IPMC in the IPM Plan.
3. A Specific PUA is required for Red-tiered pesticides unless the IPMC has established a Generic PUA for the particular Red-tiered pesticide.
4. When Automatic or Generic PUAs can apply, Emergency PUAs likely will not be requested.

Pesticide Applicator Qualification Matrix

This table was created by the UC Systemwide Pesticide Oversight Committee as a supplement to the proposed Presidential Policy on Integrated Pest Manageme
Please direct any questions to ehs@ucop.edu.

	Who can apply pesticides?		Who can perform the responsibilities of an Application Supervisor?
Tier	**Pesticide Handler**	**State Certified/Licensed Pesticide Applicator**	**Minimum Application Supervisor Qualifications**
Green	Yes	Yes	Pesticide Handler
Yellow	Yes - if supervised by a C/L Pesticide Applicator	Yes	Must be a C/L Pesticide Applicator
Red	Yes - if supervised by a C/L Pesticide Applicator physically present on-site.	Yes	Must be a C/L Pesticide Applicator

Category	Description	Examples	Common Pests	IPM Strategies
1. High-Occupancy and Daily Use Buildings	Spaces with high human activity where pest presence can directly impact health, safety, and comfort.	Academic/administrative buildings; classrooms; libraries; labs; student housing; health centers; childcare centers; event spaces	Ants, cockroaches, flies, rodents, spiders, bed bugs, silverfish, wasps	**Prevention:** Seal entry points, improve sanitation, manage waste. **Monitoring:** Sticky traps, rodent stations, inspection logs. **Thresholds:** Zero tolerance for rodents, cockroaches, and bed bugs; low tolerance for ants and flies indoors.
2. Food Service and Hospitality Areas	High-risk areas for pest attraction due to food handling, preparation, and waste. Require strict sanitation and rapid response measures.	Dining halls; cafés; catering spaces; food storage; loading docks	Cockroaches, rodents, ants, flies, stored-product pests, wasps	**Prevention:** Strict cleaning protocols, sealed food storage, timely trash removal. **Monitoring:** Regular inspections of drains, storage, and prep areas. **Thresholds:** Zero tolerance for rodents, cockroaches, and stored-product pests.
3. Cultural, Recreational, and Assembly Spaces	Public gathering areas where pests may cause nuisance, damage property, or disrupt activities.	Theaters; galleries; recreation centers; gyms; student unions	Rodents, cockroaches, ants, silverfish, fabric pests, stinging insects	**Prevention:** Regular deep cleaning, reduce clutter, maintain building envelopes. **Monitoring:** Pest activity logs, inspection of high-risk storage areas. **Thresholds:** Zero tolerance for rodents, cockroaches, and fabric pests in sensitive areas.
4. Outdoor Landscapes and Open Spaces	Managed green spaces that provide aesthetic and recreational value but may harbor insects, weeds, or plant diseases.	Lawns; gardens; arboretums; courtyards; plazas; streetscapes; water features; wooded areas	Weeds, turf pests, aphids, beetles, mosquitoes, squirrels, gophers, birds	**Prevention:** Use resistant plants, proper irrigation, mulching, biological controls. **Monitoring:** Regular scouting for pests, weed mapping, mosquito trapping. **Thresholds:** Action based on damage thresholds (e.g., % turf affected), except zero tolerance for standing water breeding mosquitoes.
5. Habitat and Conservation Areas	Naturalized zones are designed to protect biodiversity, support pollinators, and provide ecosystem services. Pest	Habitat restoration areas; riparian zones; wetlands; stormwater channels; natural open space	Invasive plants, mosquitoes, ticks, rodents, invasive insects, nuisance birds	**Prevention:** Promote native species, habitat restoration, remove invasive plants. **Monitoring:** Habitat surveys, mosquito/tick surveillance. **Thresholds:** Intervene only when invasive species or pests threaten ecological balance or public health.

Category	Description	Examples	Common Pests	IPM Strategies
	management should prioritize ecological balance.			
6. Athletic and Recreational Fields	Heavily used turf areas that require consistent quality and safety standards, with pests and weeds potentially impacting playability.	Athletic fields; tracks; tennis courts; playgrounds; recreation courts; golf course	Turf pests, weeds, gophers, moles, ants, wasps, geese	**Prevention:** Proper mowing, aeration, irrigation, soil health management. **Monitoring:** Routine turf inspections, soil sampling, gopher mound counts. **Thresholds:** Intervene when pest damage affects turf safety/playability; zero tolerance for fire ants and burrowing animals on fields.
7. Agricultural and Research Areas	Special-use zones where crops, plants, or animals are studied or maintained.	Agricultural plots; greenhouses; nurseries; teaching gardens; community gardens; animal facilities	Aphids, mites, thrips, soil pests, rodents, birds, plant diseases, flies in animal areas	**Prevention:** Crop rotation, resistant varieties, sanitation, exclusion in greenhouses. **Monitoring:** Sticky traps, scouting logs, plant disease diagnostics. **Thresholds:** Action thresholds defined by research/teaching goals; zero tolerance for rodents in animal facilities.
8. Infrastructure, Utilities, and Support Areas	Operational and service zones that often attract pests due to waste, moisture, and limited visibility. Require ongoing monitoring and preventive maintenance.	Central utility plant; shops; mechanical yards; parking lots; garages; transit hubs; construction sites; waste/recycling areas; loading docks	Rodents, cockroaches, flies, pigeons, raccoons, ants, wasps, termites	**Prevention:** Exclusion (seal gaps), manage waste, eliminate standing water, bird deterrents. **Monitoring:** Rodent bait stations, inspections of waste areas, termite inspections. **Thresholds:** Zero tolerance for rodents, cockroaches, and termites; action thresholds for birds and wildlife based on safety/nuisance risk.