



II. Academic Program Review Dossier Cover Page | 2024 Cycle

Name: Sean Hogan

Preferred Pronoun(s): He/Him

Academic Title: Academic Coordinator II

County/Program: Informatics and Geographic Information Systems (IGIS)

Review Type: Merit

Current Rank/Step: 3

Requested Rank/Step: 4

Review Time Period: October 1, 2021 – September 30, 2023

Thematic Areas:
Training and Education
GIS and Remote Sensing Support
UC ANR Advocacy
Drone Services and Research
Administrative Duties



ANR Academic Position Description:
IGIS Statewide Program, Academic Coordinator II

Sean Hogan
Effective Date:
10/1/2016

PURPOSE AND CLIENTELE

The *Academic Coordinator II* (ACII) appointment with the *IGIS Statewide Program* helps fulfill the goals of IGIS by facilitating the delivery of research, training, and data support to the UCANR network. The *ACII* provides vision and leadership for the development and implementation of IGIS research and extension programs, including strategic planning, quality assurance of program deliverables, collaboration and coordination with local and external partners, alignment of IGIS programs with the UCANR Strategic Vision, and program development, including funding procurement. The *ACII* also provides technical and academic support for research and extension through development of training materials, curricula, technical support for clientele, geospatial data analyses and tools, and development of new applications of geospatial science.

The *ACII's* primary clientele is the entire UCANR community including all Academics and Staff, all Statewide Programs and Institutes, RECs, AES faculty, and ANR leadership. Secondary clientele include ANR academics' direct collaborators in projects, and AES students.

The position is based at the UC ANR Facility in Davis CA, with frequent travel to other UCANR locations, UC campuses, and research field sites as required.

ACADEMIC PROGRAM RESPONSIBILITIES

1. Maintain continuous **Self-Improvement, Technical Competency and Professional Development:**
 - a. Participate in in-service training, seminars, workshops, Work Group meetings, short courses, online courses, professional society meetings and/or other relevant opportunities.
 - b. Maintain professional competency in Geographic Information Science, informatics, spatial data science, and remote sensing.
2. Providing geospatial knowledge and support for **research and UCANR programs:**
 - a. Identify and apply for funding opportunities while simultaneously developing collaborations to advance high priority research and outreach interests in accordance with the IGIS mission and UCANR Strategic Vision.
 - b. Collaborate with UCANR affiliates to test, refine and document new applications of geospatial science and technology, including GIS, remote sensing, and drone technology.
 - c. Develop and document tools and methods that employ novel combinations of analysis, technology and data driven research hypotheses.
 - d. Contribute to scholarly contributions where possible.
3. Provide **Program Coordination** for UCANR affiliated drone activities:
 - a. Plan, support, supervise, and/or execute drone data collection missions for UCANR and its affiliates.
 - b. Help prepare and manage drone program and project budgets.

- c. Help develop, implement, and monitor project work/plans, deliverables, tracking systems, and invoices.
 - d. Coordinate with IGIS staff to ensure that outcomes and impacts are effectively measured and communicated.
 - e. Oversee program and project reporting in a timely and high quality manner.
4. Provide technical support and **Training** to build greater capacity for geospatial technology applications within UCANR:
- a. Collaborate with IGIS personnel in needs assessments for IGIS clientele, regarding geospatial data needs, informatics, knowledge and skills, and technical support.
 - b. Assist in the development of curricula, training materials, and technical documentation.
 - c. Design, lead and support technical training programs for IGIS clientele.
 - d. Identify and develop innovative methods and formats for delivering and evaluating training and technical support.
5. Support, develop, and implement strategic **Outreach, Marketing, and Communication**:
- a. Participate in public events that highlight the work of UCANR.
 - b. Promotes UCANR's cooperative extension efforts, statewide programs, RECs and public engagement activities, through spatial data visualization support.
 - c. Represent IGIS in a professional manner at meetings within UCANR and other fora.
 - d. Reach out to new clientele in accordance with the IGIS Strategic Plan and UCANR Strategic Vision.
 - e. Develop and disseminate marketing materials including fliers, posters, presentation materials, online resources, multimedia, blog posts, articles, etc.
 - f. Facilitate new project development and collaborations, including conceptualization, technical translation, pilot studies, and applying for funding.
 - g. Actively advocate for IGIS program awareness and support.
6. Provide technical and ideational support in **Program Development**:
- a. Contribute to the development and implementation of an IGIS Strategic Plan in accordance and alignment with the UCANR Strategic Vision and Strategic Plan.
 - b. Assist in the coordination of internal and external program reviews, including Five-Year Program Reviews.
 - c. Support and help improve internal systems for tracking activities, program deliverables, and outcomes.
 - d. Interact with UCANR Program Teams, Specialists and others within the research & extension continuum to develop, strengthen and expand the local delivery of IGIS services and resources.
 - e. Identify funding opportunities, and coordinate and provide technical input for the development of proposals for extramural funding for ANR research and extension programs.
 - f. Identify, develop, and maintain productive collaborations within UCANR, other units in the UC system, state and local government, and industry.
7. Support ANR, UC, and the people of California through **Service**:
- a. Participate in and assist with UCANR lead events, Work Groups & Program Teams, committees, task forces and other formal and informal structures.
 - b. Participate in professional associations and collaborations with federal, state and county governmental agencies, non-government organizations and other groups by providing independent science-based information and leadership.
 - c. Foster an increased understanding of Cooperative Extension's research and education programs in clientele, the public and policy makers.

8. Prioritize **Collaboration, Teamwork & Flexibility**, in facilitating and maintaining a positive working environment within IGIS and UCANR:
 - a. Provide vision, inspire, and motivate others with attitude and actions across many programs and constituencies.
 - b. Set a high standard for excellence.
 - c. Innovate and foster positive change.
 - d. Model and support a productive team-working environment.
 - e. Encourage and be open to exploring new ideas and innovative changes.
 - f. Be an effective listener and communicator.

AFFIRMATIVE ACTION

Although this ACII position engages with numerous academic programs and projects, opportunities for affirmative action may be limited due to the inward-facing nature of the ACII position, which primarily focus on supporting pre-existing programs and projects with the UCANR network. Nonetheless, the ACII will:

1. Comply with all applicable federal and state laws and regulations, and all University policies regarding affirmative action, including prohibition of discrimination on the basis of race, color, national origin, religion, sex, sexual orientation, physical or mental disability, age, veteran status, medical condition, ancestry or marital status.
2. Promote, in all ways consistent with other responsibilities of the position, accomplishment of the affirmative action goals established by UCANR.
3. Take all measures necessary to assure that any employee or volunteer workers supervised by this position fulfill their affirmative action responsibilities.
4. Plan and conduct programs in such a manner as to provide equitable service to all ethnic and gender groups that comprise the potential clientele population for the program.
5. Identify any barriers to clientele participation related to ethnicity, gender, or other characteristic of concern under the university's affirmative action policies, and take corrective action as needed to remove such barriers.
6. Compile and maintain at the program level documentation of services provided to each ethnic and gender group (when possible), including records of clientele participation, quantitative evaluations of benefits realized by clientele, and reports of any special efforts to serve under-represented groups.

ADMINISTRATIVE RELATIONSHIPS

The ACII is administratively responsible to the Director of the IGIS Statewide Program. The ACII works cooperatively with all members of the IGIS Statewide Program, Director of Program Planning and Evaluation, and Vice Provost of Strategic Initiatives and Statewide Programs.

QUALIFICATIONS

Minimum and Required Qualifications:

- A Master's degree in Environmental Science, Ecology, Geography, Agriculture, Statistics, or an appropriate related field with experience in data science, geographic information sciences, remote sensing, or ecological informatics. Experience developing and managing research projects including agriculture, ecology, or climate change. Experience using GIS, remote sensing, and/or

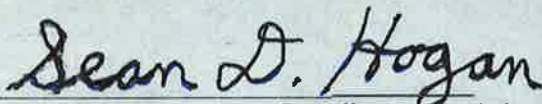
web programming software. The ability to communicate and extend technical information in an understandable manner. Knowledge of human relations is required, including the ability to work with people with a diversity of views and values, to motivate people and adapt to changing situations.

Must Demonstrate:

- Knowledge of human relations is required, including the ability to work with people with diverse views and values while motivating and adapting to changing situations.
- Literacy in internet communications and software to support research and education programs.

Preferred Qualifications:

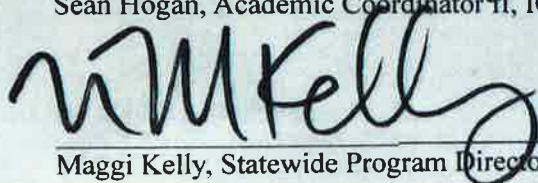
- Potential to accomplish team-based research and education programs consistent with the values of Cooperative Extension and meeting IGIS goals is preferred. Experience with or knowledge of Cooperative Extension is preferred. Familiarity and experience with web-based data frameworks and mapping in support of research and education programs is preferred. Experience in productively interacting with multiple researchers and stakeholders is preferred. FAA Part 107 Remote Pilot License with sUAS certification. Experience teaching geospatial topics for diverse audiences in diverse settings.



Sean Hogan, Academic Coordinator II, IGIS

Date

1-31-19



Maggi Kelly, Statewide Program Director, IGIS

Date

1/30/2019



Mark Bell, Vice Provost of Strategic Initiatives and Statewide Programs

Date

1/31/19

III. Program Summary Narrative

Introduction

I am an Academic Coordinator II (ACII) with the Informatics and GIS Statewide Program, located at the UC ANR Building in Davis CA. I report to the IGIS Program Coordinator, Dr. Andy Lyons and Program Director, Dr. Maggi Kelly, and am fortunate to work with a small but extraordinary team, including, IGIS Service Center Supervisor, Shane Feirer, and GIS Programmer/Analysts, Robert Johnson, Genoa Starrs, and Ben Satzman.

In this appointment, I provide vision and leadership for the development and implementation of IGIS research and extension efforts (particularly related to drone activities and training), including strategic planning, quality assurance of program deliverables, collaboration and coordination with internal and external partners, alignment of IGIS programs with the UCANR Strategic Vision, and program development, including funding procurement.

IGIS is unique among the UC ANR Statewide Programs in that it functions as both a spatial data service center as well as a collaborative academic support unit. The primary clientele of IGIS are academics and staff within the UC ANR organization, followed by AES associates within the greater UC system. Our secondary clientele consists of AES students, external collaborators, who are most often associated with our ANR academic peers and partnering organization who align with IGIS and UC ANR's Strategic Vision. Accordingly, we view our audiences as an overlapping set of concentric circles, with ANR units at the center, followed by ANR's direct partners and collaborators, partner organizations, state and local governments, growers, and other public groups in California. As a reflection of our clientele's needs for spatial data acquisition, management, analysis and visualization, my efforts cut across all of ANR's Strategic Initiatives; however, generally my greatest allocations of effort are aligned with Sustainable Food Systems and Sustainable Natural Ecosystems.

Theme #1: Drone Services and Research

I came to the IGIS Statewide Program in 2014 as a remote sensing expert through education and experience; therefore, applications of drone data collection and mapping were a natural fit with my interests and skill sets. Moreover, I recognized the potential for remote sensing applications of this technology at a scale that is most appropriate for experimental field research. Starting in early 2016, I dedicated a significant amount of time inside and outside of work to educating myself on all things drone related. Through this effort, I became the primary authority on drone applications within UC ANR, and one of the lead drone experts within the entire UC System.

In August 2016, the Federal Aviation Agency (FAA) enacted a new set of rules and regulations, which allowed me to begin providing drone services to UC ANR, for both research and educational purposes. With previous regulatory barriers out of the way, I quickly took a lead role in building a program around drone services for UC ANR and its close UC affiliates. This included IGIS establishing a system of salary and equipment recharge to recuperate time and expenses on drone projects, to create a sustainable drone program. Further facilitating this, the UC Office of the President created a UC wide system of administration for all UC related drone operations and provided insurance for field operations.

The services that we incorporated into our program include project-planning, support for regulatory compliance, data collection, data processing, GIS analysis, and visualization. Clientele of these services consist of a cross section of UC ANR Advisors, Research and Extension Center personnel, campus-based Specialists and Agricultural Experiment Station (AES) faculty.

Inputs to this theme include investments of time into planning, support, supervision, and/or execution drone data collection missions, as well as processing and analysis of data that we collect. I develop and oversee drone project budgets and help to develop, implement, and monitor project

work/plans, deliverables, and invoices. I coordinate with IGIS staff to ensure that outcomes and impacts are effectively measured and communicated with project reporting in a timely manner. Financial inputs/investments, which support this theme, come from a number of federal, state (UC), and private funding sources, partially including grants from the USDA, NSF, UC ANR, UC Davis, and UC Berkeley.

During this evaluation period (Oct 1, 2021 to Sep 30, 2023) I have conducted 12 projects and consulted on no less than 10 additional projects as ANR's drone safety administrator. Even in the wake of Covid-19, which significantly curtailed drone operations, IGIS recharged \$44,929 on drone projects, with \$32,247 of these funds coming from sources external to ANR. Field campaigns for these projects covered approximately 8,133 acres, with repeated flights conducted at some of the project sites.

To highlight a couple outcomes related to drone projects conducted during this period, we successfully demonstrated that using digital aerial photogrammetry of pistachio orchards is much more efficient than traditional methods for measuring structural metrics of pistachio trees; resulting in a peer-reviewed publication, which I coauthored. These metrics are now being paired with spatially explicit tree genetic data to possibly better inform future tree plantings. IGIS collected drone imagery for the entire 3500-acre burned area at the Hopland Research and Extension Center in 2018, 2020 and 2021, following the River Fire. This data is now being used by researchers to assess the ecological recovery of HREC following the fire, and may be used in additional studies for years to come.

Excitement around the topic of drones attracts collaborators and funding opportunities seemingly at every turn; limited only by our capacity to take on new projects.

Theme #2: Training and Education

Upon my arrival to IGIS in 2014, I recognized that the only mandated mission of the IGIS program that was not yet being addressed, due to staffing, was that of GIS and informatics training. Given my broad academic background in agriculture and natural resources (including experience in rangeland and forest ecology/management), in addition to my GIS and remote sensing expertise, I was particularly suited to take a role in developing specialized training courses for UC ANR and its affiliates.

During my time at UC ANR, I have continued to develop and deliver workshops customized for ANR's affiliates and clientele, pertaining to web mapping, story maps, computer cartography, mobile data collection, spatial data management, Google tools, and our most popular training topics yet, drone technology, regulations and data processing.

The clientele for our training efforts has significantly broadened since our earliest workshops, which initially targeted ANR, AES and Cooperative Extension affiliates, to now also include public and private participants. Our largest annual training event, DroneCamp, which was first held in Davis in 2017 and included 38 participants, has since been adapted to a hybrid in-person and online format, enabling people to attend from all around the country, and even from around the world, to include 144 participants in 2022 and 127 participants in 2023.

Providing geospatial technology training around the state has been a great avenue for connecting with a broad audience of both ANR and non-ANR affiliates. Hence, workshops have taken on two purposes, 1) to deliver the most practical GIS and informatics material possible to our diverse internal and external clientele, and 2) to be a means of sharing what IGIS has to offer to both ANR affiliates and the public at large. In this manner, I was able to project the relevance of IGIS and ANR around the state, while in the spirit of cooperative extension, providing high quality and practical training to clientele who were most interested in the activities and mission of ANR.

Labor and software requirements dedicated to the IGIS training program are financially supported by IGIS's general funds, and beginning in March 2021, further financial support has come from the AI Institute for Food Systems (AIFS); in compensation for helping to fulfill some of this AIFS' training needs. When appropriate, registration fees have been charged for certain training events (e.g. DroneCamp

events) and through these fees IGIS has built up a training/conference account balance of \$72,707 to cover future training event expenses, including salary expenses for the event planning and coordination.

Building and implementing an effective training program has several aspects. In addition to developing curriculum/workshop material for training events, I have also been responsible for advertising, website design, coordination with the UC ANR Program Support Unit to collect fees and to provide catering, and follow-up evaluations for the training events in coordination with members of the ANR Program Planning and Evaluation Unit.

IGIS provided 37 short-courses/workshops during this evaluation period, of which I was a lead coordinator and/or instructor for 23. In the 23 workshops that I lead, there were a total of 674 attendees. Based upon a recent sample of virtual workshop registrations (N = 531), workshop participants consisted of approximately 28% UC students, 15% non-ANR UC campus-based staff, 11% UC ANR staff, 10% external non-UC students, 9% external non-UC staff and academics, 6% UC ANR affiliated academics (including UC ANR Specialists, County Directors, and Farm Advisors and AES faculty), 6% from private sector, 4% UC affiliate volunteers, 4% non-governmental or non-profit organizations, 4% international attendees, and 3% governmental employees.

It is important to note that IGIS has updated our evaluation questions to better assess impacts of our training events, however, virtual evaluation response rates remain low in comparison to in-person evaluation response rates. Nonetheless, post-workshop evaluations n=146 (out of 403 recent attendees surveyed), revealed the following average responses/ratings:

- Overall rating of the workshops: 4.6 out of 5
- Attendee's knowledge of subject matter before the workshop: 1.7 out of 5
- Attendee's knowledge of subject matter after the workshop: 3.2 out of 5
- The median evaluation scores for all workshops were consistently 5 out of 5

Theme #3: Administrative Duties

My administrative responsibilities are non-traditional in some respects for an Academic Coordinator, as reflected in my attached Position Description, which conventionally emphasizes technical competence, collaboration, communication, university service and professional development, yet also prioritizes scientific research, training, technical support, and advocacy efforts in ways that may not be common for other ACII appointments. As one of the division's leading experts in GIS, remote sensing, and spatial science, in conjunction with my expertise in drone technology and regulations, I am frequently called upon to not only provide technical support for projects but also scientific advice and collaboration that is critical to the experimental design and outcomes of projects. For this reason, I am occasionally requested to be a Co-Principal Investigator (Co-PI) on projects, rather than simply a collaborator, wherein I manage budgets, authorize funding, and help to oversee project work. Recognizing this, Associate Vice Presidents, Dr. Wendy Powers and Bill Frost, have previously authorized me to function as a Co-PI on projects, granting me exemptions from UC ANR policy for my ACII job classification.

In January 2017, I was granted administrative authority through the UCOP Center of Excellence on Unmanned Aircraft System Safety (UASSafety), to oversee UC ANR's drone operations; to ensure that the division meets all necessary legal and safety standards. This includes the ability to authorize or deny flight requests and review UC ANR related drone activities, through the UASSafety online Drone Management System. This leadership role has helped facilitate communications with other UC ANR affiliates who are engaged in drone operations. Additionally, I am occasionally asked to help monitor flight requests made throughout the entire 10 campus and natural reserves of the UC System, when the Director of UASSafety, Dr. Brandon Stark, is unable to do so, making this a statewide activity.

Theme #4: GIS and Remote Sensing Support

Since the inception of IGIS as a Statewide Program in 2012, one of the core mandates for the program has been to provide geospatial knowledge and support for UCANR affiliated research and programs. Although my colleagues handle the majority of ANR service requests through the IGIS Service Center, I also frequently assist with projects, and especially so with projects that are aligned with my remote sensing expertise.

Additionally, I work hard to develop collaborations throughout the UC System to advance high priority research and outreach interests, in accordance with the IGIS mission and UCANR Strategic Vision. This includes identifying and applying for funding opportunities, which help to support our IGIS program. Within these collaborative efforts, I frequently have the opportunity to test, refine and document new applications of geospatial science and technology (including applications of drones, remote sensing, GIS and web integrated data structures), using novel combinations of analyses for data driven research.

Although it is somewhat atypical for Academic Coordinators to pursue scholarly efforts and publishing is traditionally is not a requirement of the job title, when possible I offer my support to scholarly manuscripts related to my project contributions.

During this review period, I collaborated on three major non-drone related remote sensing projects. The first of which involved delineating every stream in Marin County CA, then classifying the land cover immediate surrounding the streams using machine learning. Zonal statistics of the classifications were combined with research conducted by UC ANR Advisor, David Lewis, to estimate potential opportunities for carbon storage if restoration efforts are applied to the areas adjacent to the streambeds. We coauthored an article describing the project findings, which was published in a peer reviewed journal during this review period.

The second project regarded mapping conifer encroachment into rangelands and broad-leaf woodlands in Humboldt county during the last 70 years. My role in this project involved applying my remote sensing expertise to mesh historic aerial photos into a seamless georegistered orthomosaic and then to classify the results using cutting edge techniques that I developed as part of my previous dissertation work. Part of this effort includes comparing historic image classifications to modern aerial imagery, in order to quantify range-shifts and expansion of conifers on the landscape, presumably related to climate change. Analysis of this large remote sensing/GIS dataset has been conducted and in collaboration with UC ANR Advisors Yana Valachovic, Lenya N Quinn-Davidson and David Lewis, I have begun writing a manuscript to for peer review publication in the coming year.

The third project was interested in monitoring changes in traditional heritage sites of the Karuk Native American Tribe over the past 50-70 years in the Klamath River Basin. This project included a novel approach the validating change detection statistics between historic imagery and contemporary image classifications that could be extremely useful for similar studies in the future. I have helped to coauthor a journal article on this work, which is now in the final stages of peer review prior to publication.

Theme #5: UC ANR Advocacy

One of my favorite responsibilities as an ACII is to support, develop, and implement strategic outreach, marketing, and communication efforts on behalf of UC ANR. This frequently takes the form of University Service, wherein I advocate for UC ANR through the workshops and presentations that I provide online and around the state (see tables). These presentations foster increased understanding of UC ANR's research and education programs to clientele, the public and policy makers alike. Furthermore, I frequently provide table displays and serve as a presenter at large public events on behalf of UC ANR, such as at the World Ag Expo and at the UC ANR Statewide Conference. I have a distinct advantage of

having eye-catching drones to draw people's attention and to serve as a conversation starter, which provides abundant opportunities talk about ANR's other important programs.

Besides these conventional methods of ANR advocacy, during this evaluation period, I have invested considerable time into organizing and bolstering the content of UCANR-IGIS's YouTube channel. During this evaluation period, I have published 47 training videos on YouTube, which have been watched 9555 times. This YouTube channel now has over 2100 subscribers, and has had over 100,000 total views since 2018.

University & Public Service

University and public service are among my favorite aspects of my job. Some of my most enjoyable moments at ANR have come from participating in and assisting with UCANR events, such Programmatic Orientations and the ANR Statewide Conference, for which I have served on planning committees in the past (pre-Covid-19). I also enjoy the comradery of work groups, including the new Drone Work Group, for which I am a co-chair.

I am a member of the UC wide Drone Advisory Committee, that steers the UC's policies for drone operations. I provide UC wide support for drone application oversight as a safety administrator, and regularly I provide office-hour consultations pertaining to drone technologies and mapping for UC-wide affiliates, as well as private individuals around the state.

Professional Competence

During my initial year and a half at UC ANR, while working full time, I completed my doctoral dissertation in Geography at UC Davis, exceeding the minimum qualifications for my job appointment with PhD (awarded in March, 2016). The focus of this dissertation was on pushing the limits of land use and land cover classifications through the use of machine learning algorithms to exploit environmental, regulatory and social data in conjunction with satellite imagery.

Throughout this current evaluation period, I have continued to hone my professional competency by continuously taking advantage of in-person and online learning opportunities, and seeking feedback to improve our curriculum, while developing and delivering robust geospatial technology workshops in collaboration with the UC Berkeley Geospatial Innovation Facility (GIF), UCOP's Center of Excellence for UASSafety, CITRUS and the Banatao Institute at UC Santa Cruz, an assortment of drone experts at UC Davis, the AI Institute for Food Systems (AIFS).

Affirmative Action

Fair representation of services for California's population(s) is a very important priority for me. Although in my program position, I have limited opportunities to support affirmative action, I have sought ways to more directly serve our underrepresented segments of the state's population. One way that this has been achieved is by creating scholarship programs to support attendance in our IGIS's training events, with priority given to minority and underprivileged persons. In both 2022 and in 2023 we provided 24 scholarships to our DroneCamp event, based on this criterion.

In 2018, Dr. Andy Lyons and I partnered with UC Berkeley Specialist, Dr. Jennifer Sowerwine, and members of the Karuk tribe in Siskiyou County to develop a specialized training curriculum for the Karuk tribe. This multi-year project was funded by the USDA; with IGIS's responsibility initially to provide STEM education to the tribe's youth and to support Agroecological Resilience monitoring. During this evaluation period, I continued to collaborate with members of the Karuk tribe in the interest of preserving their spatially explicit cultural knowledge, and coauthored a scientific journal article along with several of the tribe members.

IV. Supporting Documentation

A. Project Summary

Project Title	Role	Collaborators	Support Amount/Duration (if applicable)	Support Source
Drone Services and Research (13)				
Pistachio Fields Structural Analysis	Drone operator; Spatial Analyst; Co-author of study results	Ewelina Maria Jacygrad @ University of California, Maggi Kelly @ UC ANR	\$12,145.32, January 2018 to present	UC Foundation Plant Services
Updating Information on Evapotranspiration of Mature Micro-irrigated Citrus Orchards in the San Joaquin Valley	Drone and GIS Service Provider; Data Analyst	Maggi Kelly @ UC ANR, Robert Johnson @ UC ANR, Daniele Zaccaria @ UC ANR	\$10,791, July 2018 to present	UNK – UC Davis
River Fire Damages Monitoring at Hopland Research and Extension Center	Drone data collection operator and supervisor	Maggi Kelly @ UC ANR, Shane Feirer @ UC ANR, Valerie Eviner @ UC ANR, Carolyn Abrams @ UC ANR, Alison Smith @ UC ANR, John Bailey @ UC ANR,	\$11,102, August 2017 to present	UC ANR
Monteverde Costa Rica	Drone data collection operator and collaborator	Todd Dawson @ UC Berkeley	\$13,813, July 2022 to present	NSF
Oakville Station Vineyards	Drone data collection operator and collaborator	Dario Cantu @ UC ANR	\$1250, June 2021 to June 2022	UC Davis

Project Title	Role	Collaborators	Support Amount/Duration (if applicable)	Support Source
Ambrosia Beetle Mapping	Drone data collection operator and collaborator	Mike Jones @ UCANR, Shane Feirer @ UCANR	\$17,168, June 2022 to present	UNK
CalFire Microsite Tree Recruitment	Drone data collection operator and collaborator	Susan Ustin @ UC Davis, Patricia Mallone @ UC Davis	\$987, August 2023 to present	CalFire
Rural Broadband Mapping	Drone data collection operator and collaborator		\$12,681.73, December 2022 to present	UC ANR
Training and Education (3)				
IGIS DroneCamp	Co-Lead Coordinator; Lead for Curriculum Development; Lead Instructor	Maggi Kelly @ UC ANR, Shane Feirer @ UC ANR, Robert Johnson @ UC ANR, Andrew Lyons @ UC ANR, Jacob Flanagan @ UC ANR	\$72,707, July 2017 to present	Registration fees
IGIS Online Training Curriculum	Presenter	Maggi Kelly @ UC ANR, Shane Feirer @ UC ANR, Robert Johnson @ UC ANR, Andrew Lyons @ UC ANR	N/A	UC ANR
Karuk Tribal GIS and Remote Sensing Support	Consultant	Andy Lyon @ UCANR, Jennifer Sowerwine @ UC Berkeley	UNK	UNK
Administrative Duties (1)				

Project Title	Role	Collaborators	Support Amount/Duration (if applicable)	Support Source
GIS and Remote Sensing Support (2)				
Silent Straws - Conifer Encroachment Study in Humboldt County	Remote sensing and GIS Technical Service Provider	Maggi Kelly @ UC ANR, Yana Valachovic @ UC ANR, Shane Feirer @ UC ANR, Lenya Quinn-Davidson @ UC ANR, Jacob Flanagan @ UC ANR	\$16,000, Nov 2018 to present	UC ANR
Increases in soil and woody biomass carbon stocks as a result of rangeland riparian restoration	GIS analysis and coauthor	David Lewis @ UC ANR, Anthony O'geen @ UC ANR, Shane Feirer @ UC ANR, Valerie Eviner @ UC ANR, Kenneth Tate @ UC ANR	N/A	N/A
UC ANR Advocacy (1)				
UCANR-IGIS YouTube Channel	Lead coordinator and content provider	Andrew Lyons @ UC ANR	N/A	UC ANR

B. Professional Competence and Professional Activity

Professional Development and Training

Begin Date - End Date	Location	Name, Description and Occurrence of Activity
Oct 5, 2021 - Oct 6, 2021	Online	Pix4D User Conference
Oct 19, 2021 - Oct 21, 2021	Redlands California	2021 ESRI Imagery Summit

Begin Date - End Date	Location	Name, Description and Occurrence of Activity
Nov 4, 2021	Online	Planet Labs Imagery Orientation
Jul 10, 2023 - Jul 14, 2023	San Diego	ESRI Users Conference 2023
Jul 11, 2023 - Dec 8, 2023	Online (with in-person meetings)	Society for Conservation GIS
Sep 12, 2023 - Sep 13, 2023	UC Davis	AI Institute for Next Generation Food Systems Conference
Sep 21, 2023	UC Berkeley	GeoNadir presentation by Karen Joyce

Disciplinary Society or Professional Association

Disciplinary Society/Prof. Assoc Name	Membership/Meetings Attended/Activities
Society for Conservation GIS	Membership and meetings
American Society of Photogrammetry and Remote Sensing	Membership, meetings and online material

Evidence of Professional Competency

Begin Date - End Date	Location	Name, Description and Occurrence of Award, Recognition, Professional Presentation, Office or Activity
Nov 30, 2021	Online	Guest Speaker at NRCS Ag/Conservation Meeting
Nov 30, 2022	CSU Monterey Bay	Drone Automation and Robotics Technology Symposium - Presenter

C. University Service

Begin Date - End Date	Name, Description, and Occurrence of Activity	Org Level	Your Contribution and Leadership Role
May 14, 2019 - Dec 7, 2023	UC UAS Advisory Committee	State	Member of UC Wide Advisory Committee for Drone Usage
Oct 4, 2021	ANR Mentor Meeting	Region	Prospective mentor for incoming hires
Oct 14, 2021 - Sep 14, 2023	DroneChat (Workgroup Meeting)	University-wide	Co-chair of Drone Workgroup
Apr 24, 2023 - Apr 27, 2023	UC ANR Statewide Conference	Division-wide	Table presenter (all days) and Drone Workgroup session coordinator and lead presenter
Dec 8, 2023	UC Davis Geography Graduate Group Alumni Panel - Mentorship Meeting	Region	Chair of Graduate Group Alumni Meeting

D. Public Service

Begin Date - End Date	Name, Description, and Occurrence of Activity	Org Level	Your Contribution and Leadership Role
Dec 9, 2022	Consultation with California farm bureau on legislation to allow pesticide applications with drones. I believe that my input may have helped the legislation to pass in 2023	State-wide	Consultant

E. Extension Activities

Meetings Organized

Begin Date - End Date	Meeting Name and Type	Topic/no. of repetitions	Role	Location(s)	Total No. of Attendees
Training and Education (80)					
Oct 1, 2021	Introduction to ArcGIS Online Workshop	Web map training / 1	Coordinator and Instructor	Online	22
Oct 8, 2021	Introduction to ArcGIS Storymaps Workshop	Web maps and story maps training / 1	Coordinator and Instructor	Online	21
Oct 16, 2021	DroneCamp 2021 In- Person Training	Drone operation training / 1	Coordinator and Instructor	Fort Ord, Marina Ca.	30
Oct 22, 2021	Introduction to ArcGIS Pro Workshop	GIS training using data from Lindcove REC / 1	Coordinator and Instructor	Online	18
Nov 5, 2021	Introduction to ArcGIS Field Maps Workshop	Introduction to ArcGIS Field Maps (Mobile Data Collection) / 1	Instructor	Online	21
Nov 19, 2021	Introduction to Jupyter Notebooks in ArcGIS Pro Workshop	Jupyter Notebooks and python coding in ArcGIS Pro training / 1	Coordination and IT support	Online	14
Dec 10, 2021	Introduction to Cartography in ArcGIS Pro Workshop	Cartography in ArcGIS Pro Training / 1	Coordinator and IT support	Online	9
Feb 2, 2022	AIFS Coordination Meeting	Curriculum planning meeting / 1	Coordinator	Online	5

Begin Date - End Date	Meeting Name and Type	Topic/no. of repetitions	Role	Location(s)	Total No. of Attendees
Feb 18, 2022	Introduction to Jupyter Notebooks in ArcGIS Pro Workshop	Using Jupyter Notebooks in ArcGIS Pro / 1	Coordinator and Assistant	Online	11
Feb 21, 2022 - Feb 22, 2022	GIS for Forestry Workshop	Forestry GIS Workshop / 1	Co-coordinator and Lead Instructor	Redding CA	28
Mar 11, 2022	Imagery for ArcGIS Online Hackathon	Remote sensing / 1	Assistant Coordinator	Online	4
Mar 18, 2022	Introduction to ArcGIS Online workshop	Web map training / 1	Coordinator and Instructor	Online	9
Apr 6, 2022	Karuk Land Use Classification Meeting	Remote sensing support for cultural heritage sites / 1	Collaborator	Online	8
Apr 15, 2022	Introduction to ArcGIS Pro workshop	Mapping, Desktop GIS / 1	Coordinator and Lead Instructor	Online	13
May 20, 2022	Introduction to ArcGIS Story Maps workshop	Web maps and story maps training / 1	Coordinator and Lead Instructor	Online	12
Jun 27, 2022 - Jul 1, 2022	DroneCamp 2022	Drone mapping and data analysis / 1	Lead Coordinator, Curriculum Director, and Lead Instructor	CSU Monterey Bay	144
Jul 5, 2022 - Jul 7, 2022	AIFS Curriculum Development Meeting	Development of High School Drone Course / 1	Lead coordinator and Instructor	Woodland CA	8
Sep 30, 2022	Introduction to ArcGIS Online workshop	Web map training / 1	Coordinator and Lead Instructor	Online	38

Begin Date - End Date	Meeting Name and Type	Topic/no. of repetitions	Role	Location(s)	Total No. of Attendees
Oct 7, 2022	Applications of Drone Technology for Naturalists	Drone Mapping / 1	Coordinator and Lead Instructor	Tahoe City	5
Oct 21, 2022	Introduction to ArcGIS Pro workshop	Mapping, Desktop GIS / 1	Coordinator and Lead Instructor	Online	15
Nov 18, 2022	Introduction to ArcGIS Field Maps Workshop	Introduction to ArcGIS Field Maps (Mobile Data Collection) / 1	Coordinator and Lead Instructor	Online	9
Dec 7, 2022	Pesticide Applications with Drones Meeting and Demonstration, with the CA Department of Pesticide Regulations	Drone policy meeting / 1	Lead coordinator and presenter	Davis Ca	45
Dec 9, 2022	Introduction to ArcGIS Story Maps workshop	Web maps and story maps training / 1	Coordinator and Lead Instructor	Online	24
Jan 27, 2023	Introduction to ArcGIS Online workshop	Web map training / 1	Coordinator and Lead Instructor	Online	11
Feb 17, 2023	Introduction to ArcGIS Pro Workshop	Computer mapping / 1	Coordinator and Lead Instructor	Online	26
Apr 7, 2023	Introduction to Jupyter Notebooks in ArcGIS	Automated programmatic GIS / 1	Coordinator and assistant instructor	Online	8
Jun 26, 2023 - Jun 30, 2023	DroneCamp 2023	Drone and mapping conference / 1	Lead Coordinator, Curriculum Director, and Lead Instructor	CSU Monterey Bay	127

Begin Date - End Date	Meeting Name and Type	Topic/no. of repetitions	Role	Location(s)	Total No. of Attendees
Sep 22, 2023	Introduction to ArcGIS Online Workshop	Web Mapping / 1	Coordinator and Lead Instructor	Online	39
UC ANR Advocacy (1)					
Nov 14, 2022	Climate Smart AgriFood Innovation Engine Invitation - Meeting	Collaboration on Grant Proposal Meeting / 1	Attendee and speaker	Woodland CA	20

Educational Presentations

Begin Date - End Date	Meeting Name/Event	Presentation Topic/no. of repetitions	Location(s)	No. of Attendees
UC ANR Advocacy (1)				
Oct 20, 2021 - Oct 21, 2021	DART Symposium	Drone Applications for Agriculture and Natural Resources / 1	Monterey Ca	~250

Other (including websites, social media, blogs, collaborations with other agencies, organizations, policy engagement)

Begin Date - End Date	Description	No. of Instances
Dec 8, 2023	IGIS Workshop Schedule for Fall 2022 (blog post)	1
GIS and Remote Sensing Support (1)		
Oct 1, 2021 - Dec 8, 2023	UCANR-IGIS YouTube Channel	9555 Hits

F. Publications (Bibliography)

- Eitzel, M.V, D Sarna, S Hogan, J Sowerwine, M Mucioki, K McCovey, S Mourque, L Hillman, L.M Hillman, F Lake, V Preston, C.C Hillman, A Lyons, B Trip. Using mixed-method analytical historical ecology to map land use and land cover change for ecocultural restoration in the Klamath River Basin. Submitted. Ecological Informatics. (Submitted)
- Jacygrad, E, M Kelly, S Hogan, J E Preece, D Golino, R Michelmore. 2022. Comparison between field measured and UAV-derived pistachio tree crown characteristics throughout a growing season. Drones. 6(11), 343; <https://doi.org/10.3390/drones6110343>
- Matzek, V, D Lewis, A O'Geen, M Lennox, S Hogan, S Feirer, V Eviner, and K Tate. 2021. Increases in soil and woody biomass carbon stocks as a result of rangeland riparian restoration. Carbon balance and management 15, no. 1: 1-15. <https://doi.org/10.1186/s13021-020-00150-7>
- Jahanzad, E, B Holtz, C Zuber, D Doll, K Brewer, S Hogan, A Gaudin. 2020. Orchard recycling improves climate change adaptation and mitigation potential of almond production systems. PLOS One. <https://doi.org/10.1371/journal.pone.0229588>
- Easterday, K, C Kislik, T E Dawson, S Hogan, and M Kelly. 2019. Remotely sensed water limitation in vegetation: insights from an experiment with unmanned aerial vehicles (UAVs). Remote Sensing 11(16): 1853 <https://doi.org/10.3390/rs11161853>
- Hogan, S, M Kelly, B Stark, and Y Chen. 2017. Unmanned aerial systems for agriculture and natural resources. California Agriculture 71(1): 5-1