Environment Technology and Instructional Support (ETIS)

Annual Report to Faculty Council

2023 – 2024

Personnel Changes

This was a year of retirements and staffing changes in ETIS. In July 2023, Bernie Rutter retired as our Windows Systems Administrator. We welcomed Corey Stadnyk from WUSA to take over as our IT Specialist – Windows. In November 2023, Mary Burden retired as our Client and Technical Services Manager and we hired Shawn Lotte, previously from OHD, as our new Client Services Specialist. In April 2024, Don Duff-McCracken retired as our Director and James McCarthy was hired to take his position. We are currently working on filling James' vacant position. All the new additions have been doing a fantastic job getting up to speed and integrating into the team. We wish all the retirees the best in their next chapters and thank them for their combined 70+ years of service to our unit and the University.

During the report period Michael Tjendra was seconded to IST, and Netzach Straker was hired on contract until taking a permanent role with IST late in 2023. Weronika Fydrych also worked with us in the Winter term to help fill these staffing gaps. In the Ecology Lab, Bev Raimbault did a fantastic job as Interim Ecology Lab Manager while Anne Grant was on leave, and Kristen Capobianco stepped in for Bev.

We want to thank Netzach, Kristen, and Weronika for their excellent work in keeping the lights on while we worked through all these transitions. Our year would not have been a success without their contributions, and we wish them the best in the next stages of their careers and studies.

Workforce Planning and Rebrand

On September 1, 2023 we changed our name from MAD to ETIS. This rebrand was an output of our workforce planning review that we undertook in 2022 and 2023. The name change was to reflect our growth in instructional support and how the technological service we provide underpins so much of what we do in the faculty. Changes to our organizational structure reflect our renewed focus in these areas.

Key Projects and Activities

While much of our time this year was devoted to planning and personnel changes, the ETIS team completed and/or contributed to several key projects this year both within the faculty and across campus.

- Assisted with the transition of the campus printer fleet from Xerox to Ricoh. While there have been some hiccups, the process has gone relatively well.
- We were the first faculty to successfully complete the WCMS 3 migration, including taking down 20 sites that were no longer needed.
- The undergraduate and graduate calendars were merged, and we assisted with mitigating the impact of this on Environment sites.
- Scott MacFarlane continues to provide key support to Plant Ops and other organizations on campus who are using the Esri suite of products for administrative use.
- The Design and Modeling Centre (DMC) was shut down, and the related activities were moved to the Geddes lab. All student computing labs are now Windows only.

- ETIS staff (and all IT staff on campus) were integral in responding to the security breach in July. This necessitated all users on campus changing their passwords, which our staff assisted with. This was a significant time commitment. We continue to work on getting the SentinelOne security software deployed to all computers in the faculty as required by the University.
- In April ETIS staff attended an educational event at [Crow Shield Lodge](#) to learn more about how our work can be tied to the University's reconciliation efforts and to better understand indigenous values and perspectives focusing on natural ecosystems.
- A review of feedback from the faculty at large has been largely positive and has provided us with helpful guidance as we continue to try to align our services with the efforts of everyone in Environment.

Computing Support

In November 2023, Mary Burden retired from her role, and Shawn Lotte was hired as her replacement. Although Shawn has been in the role for five months, this report will touch on both Mary's and Shawn's contributions. During the reporting period we ordered and configured a significant amount of hardware (computers, tablets, and other devices) for staff, faculty, and researchers.

Numerous tickets for tech support have been resolved. Most minor concerns were resolved within a day, while other major concerns were escalated. In some cases, new hardware was recommended. Over the reporting period ETIS handled 633 tickets.

In the last fiscal year, there has been a shift in a few notable computing sections:

- The purchase of MacBooks has been increasing. This has led to discussions about finding a way to track and manage them. This is mentioned elsewhere in this report.
- More and more out-of-warranty systems are being reported, and replacement recommendations are being offered. With this, there is a rise in surplus for these older machines. This spring, we plan to order another bin from central stores and put out a call for old technology to be surplused.
- Recommendations for all systems to require 32 GB of RAM over 16GB have increased due to the demands of newer systems. This is not a new trend as specs and power in computers are always increasing.
- The introduction of smaller CPU chipsets saw a major increase in performance in PCs, but more so in Macs.
- PCs will soon be using 2nm chips for their CPU/GPU/RAM, much like Macs, and it will be wise to pay attention to their performance for future recommendations.

IT Infrastructure and Upgrades

Computer Labs

All labs now run Windows 11 23H2, and we continue to update the GIS, Remote Sensing, and Design software. With the decommissioning of the Design and Modeling Centre (DMC) we have worked with instructors to ensure the software they need runs in our Windows labs as we no longer support any Mac labs.

Partially to accommodate this new usage, for the 2024/2025 period we plan to update the Geddes lab with brand new towers and monitors that will support machine learning and be future-proof for the next few

years. With this update, all towers from Geddes will replace those in Galileo, and the towers from Galileo will replace those in the other full-access labs. This update is scheduled to occur in Spring 2024 for implementation in Fall 2024. We have also updated our deployment processes to reduce the amount of time and effort spent rebuilding the computer labs each term.

Servers and Networking

Two new servers and a connected storage solution were purchased to reduce our server count from 14+ down to 4. In addition to modernizing our infrastructure this has significantly improved our environmental footprint. Servers have been upgraded to modern operating systems and we are implementing more reliable failover and backup strategies. We are also working on a new monitoring system for our physical and virtual infrastructure. Finally, we are working with IST to get 10Gbps networking installed in our existing switches in our server rooms to improve the quality, speed, and reliability of our infrastructure.

Macs

In the coming year we will be piloting a new campus wide MacOS management solution currently being investigated by IST. This will allow us to better track Mac usage in the faculty and provide better security for them by ensuring systems are up to date and required applications such as SentinelOne are installed.

Instructional Support

Our instructional support team, including the geospatial staff, Ecology Lab, and Makerspace, supported more than 60 courses in 2023-24. These courses have an enrollment of more than 3,000 students that spans all the programs in the faculty. We meet regularly to discuss common issues and engage with stakeholders in the faculty. Some of the issues we discussed this year included space bookings, language barriers in experiential learning situations, software licensing, supporting the increase in sessional instructors, TA training and support, and the new Policy 30. We appreciate Julia Burke (CEL) attending these meetings to bring the campus and pedagogical perspective. The team continues to build bridges with various client groups in the faculty including attending the excellent new Teaching Conversations series and attending EGSA meetings to discuss how we can best support graduate students.

Our instructional support team provides a wide breadth of experiential learning activities and support throughout the faculty and beyond which is outlined below. A list of supported courses is provided at the end of this report.

Geospatial Support

The geospatial support staff supported 29 courses with over 1,500 students during the past year. We continue to facilitate GEM renting surveying equipment from Engineering for GEOG 310, which is a great example of cross-faculty collaboration as well as cost saving. The move of design activities and teaching from the DMC to the Geddes lab has created added pressures on lab space and availability but so far, we are managing the increase. We have been working with CEL and GEM to create an online version of GEOG/PLAN 281 after the ongoing success of GEOG 181. ETIS staff worked with the Geospatial Center to host the first in-person GIS Day event since the pandemic. As always, we continue to provide support to many core GEM and Planning courses in the areas of GIS, Remote Sensing, and other geospatial topics. In total the geospatial staff supported 29 courses with an enrollment of over 1,500 students.

The Ecology Lab supported 17 undergrad course offerings with over 1000 students enrolled in these courses. The Ecology Lab supported regularly scheduled labs as well as offering advice and equipment to students doing class projects and/or undergrad theses. Grad students also regularly borrow equipment from the Ecology Lab. Ecology Lab staff communicate regularly with instructors, helping them improve labs or design new labs. Students and instructors often express their appreciation for the resources that the Ecology Lab offers.

Ecology Lab worked closely with the Sustainability Office, connecting course labs to campus goals of improving the natural environment on campus. Students collected useful information about campus ecosystems and helped with restoration projects. As part of the sustainability living lab program, ENVS200 students planted 145 trees along Laurel Creek where Plant Operations had removed buckthorn on the main campus. Ecology lab staff were part of the UW campus bioblitz and helped with planting days.

Ecology Lab staff have begun conversations with Amanda St. Marie and the CTE Indigenous educational developers on how to incorporate indigenous knowledge and perspectives into course labs and were the driving force behind ETIS attending a half-day workshop at Crow Shield Lodge.

Outreach activities continued this year, adding many more visitors to the lab both from UW and the wider community. Ecology Lab staff were present for the fall and spring open houses and new for this year, offered mini workshops to better showcase some of the lab activities that students participate in. Ecology Lab was also involved in a new SERS outreach initiative, hosting several workshops during a high school visit to campus. The Ecology lab was again involved in the regional Envirothon, a high school competition held on the UW campus. For ENV students, the Ecology Lab was part of the ENVigorate festival, offered the popular soap making and mushroom ID workshops and hosted the annual holiday open house. We also connected with students via social media and held trivia or iNaturalist contests.

Makerspace

The ENV Makerspace hosted workshops for 100+ attendees on topics including cutting board making, string art, coaster engraving, birdhouses, and card making. We fabricated 1000+ custom designed keychains for various events around Environment. Dan Beaver accompanied the KI Museum Course to Barcelona, Spain to study museum exhibits with the KI cohort for 10 days.

Significant support went into INTEG 320 and 321 where 5 groups of students conceived, designed, and fabricated their museum exhibits. Throughout this process the students relied on Dan's expertise, the Makerspace facilities, as well as that of our two great co-op students Alanna Tran (Fall 2023) and Dev Prajapati (Winter 2024). For the first time the completed exhibits were captured in Matterport to be [preserved as a virtual reality tour](). This was possible thanks to the purchase of equipment and software by WESEF.

The Makerspace also supported several research projects, including the design and fabrication of field sampling equipment, tree core analysis boards, and a solar powered LED light control system.

Committees

ETIS continues working with our counterparts across campus on a variety of committees, including CTSC (Computing Technology and Services Committee), WNAG (Waterloo Nexus Advisory Group), MacTUG (Macintosh Technical User Group), FACCUS (Faculty Computing User Support Group), Sustainable IT,

Climate and Energy Working Group, Faculty Health and Safety Committee, PDAG (IT Professional Development Advisory Group).

Courses Supported

Below is a non-exhaustive list of courses ETIS provided support and/or facilities for in the reporting period.

Spring 2023: GEOG 181, 209, 294, 357, 381, 481 | PLAN 381, 481 | ERS 340, 341 | ENVS 200

Fall 2023: GEOG 181, 187, 205, 271, 281, 294, 310, 316, 319, 371, 387, 391, 403, 481 | PLAN 105, 210, 281, 309, 320, 351, 387, 481, 646 | ERS 100, 315 | ENVS 200 | INTEG 320, 420A

Winter 2024: GEOG 181, 209, 281, 318, 320, 371, 381, 391, 405, 407, 471, 481, 487, 604 | PLAN 203, 281, 353, 381, 481, 487 | ENVS 131, 200, 469 | INTEG 121, 321, 420B