

Foothill College Geospatial Technology Advisory Board Meeting Minutes

April 12, 2019, 11:30AM-1:30PM – Foothill College Sunnyvale Center, Room 128

Attending

Alexis Aguilar, Foothill College instructor; Adam Araza, City of Cupertino; Amadea Azerki, ESRI; John Falkowski, Santa Clara County Parks; Rick Kos, San Jose State; Stace Maples, Stanford; Allison Lenkeit Meezan, Foothill College instructor; Cristina Milesi, Cropsnap; Mike Mohebbi, Foothill College CTE; Tobias Nava, Foothill College Counseling & EOPS; Teresa Ong, Foothill College Associate Vice President, CTE & Workforce programs; Steve Rodriguez, City of Mountain View; Cindy Schmidt, NASA Ames; Maegen Leslie Torres, Green Info Network

Board members not attending

Garrett Dunwoody, Google; Jason Eggers, City of Belmont & NDNU; Christine Hansell, Foothill College instructor; Casey Hiatt, Mid Pen Open Space Preserve; Kurt Hueg, Foothill College Dean of BSS Division; Krishelle Love, San Jose Water Co.; Whit Loy, City of Menlo Park; Vanessa Smith, Foothill College Marketing; Amber Wittner, USGS & Foothill College instructor

Meeting begins with an overview of the program in the context of similar programs in the region

Allison welcomed the board and began the presentation with an overview of the Regional Geospatial tech education picture. All Bay Area CC's offer coursework in GIST, but only Foothill, DVC and West Valley offer more than one course. SFSU, SJSU, Stanford and Berkeley also offer GIST coursework, mostly at graduate level. SFSU offers weekend courses through their extension program. SJSU Urban Planning and Geography departments are merging. Possible pipeline/collaboration opportunities.

Foothill's GIST 11 and 12 are fully transferable to CSU and UCs. Other Foothill GIST courses are for the CTE certificates or AS degree. A question was asked whether we could transfer other courses as well. Unclear, but not likely as there are not lower division equivalents at UC or CSU.

Program Highlights

The highlights of the program include the low cost of the program to the college because it does not require equipment or lab space. Most GIST software is open source or purchased through the Chancellor's office site license.

Students have a very high job placement rate. Many students are finding jobs before completing the program. Downside is that we are losing program completers.

New hires have very high pay (\$30-\$38/hr for a 'technician' level job). GIST skills also bump up salaries in many fields such as peace officers or fire fighters.

Q: would employers hire just someone who has a certificate (no bachelor's degree)? Most employers still want a 4 year degree and GIST certificates, especially in government employers.

Discussion ensued about how a 4 year degree is synonymous to life skills. Employers want trainable employees. Allison noted that most students in the Foothill GIST already have undergraduate degrees. There was follow up discussion on the level of education desired for entry level employees. Board members agreed that most students may not be exposed to GIS in their undergraduate education and need the certificate or coursework at the community college to provide training.

GIST Program Challenges

- Uneven enrollment. Attrition of students due to housing, declining birth rates.
- Professional upskilling students==> who are they? how do we reach them?
- This program went online in 18/19. Completely online 100%. Students can use desktop Esri.
- Faculty migrated coursework to 100% online offering
- Students have access to GIST desktop software license through Chancellor’s office site license agreement with ESRI (Foothill must buy in). Students also use QGIS which is open source.
- ArcGIS Online has over 300 users at Foothill (used in Geography classes), continuing to offer some hybrid classes for less tech-oriented students
- Program online success due to massive effort by program faculty to convert material to online offerings. Faculty are creative and make use of technology to make for engaging online classes.
- Allison commended the faculty for their efforts.

Course enrollment numbers for the past three years were reviewed. Focus on enrollment bump in 2018-19 due to online offerings

	2018-19 ONLINE	2017-18	2016-17
<i>GIST 11 (fall)</i>	45	15	23
<i>GIST 11 (winter/spring)</i>	34	--	21
<i>GIST 12</i>	42	23	27
<i>GIST 52</i>	30	15	16
<i>GIST 53</i>	19	--	12
<i>GIST 54A</i>	33	--	22
<i>GIST 58</i>	37	22	22
<i>GIST 59</i>	30	--	13

Allison noted the class cancellations from 2017-18 due to the poor state of the college budget not supporting lower enrolled classes. Class target 'break even' enrollment is 33 for lab classes (all except GIST 11) and 40 for GIST 11. There is still room for improvement to meet target numbers.

Allison noted that the state's new funding formula rewards the number of certificates and degrees awarded, so she is seeking help and ideas from the college administration to encourage students who have completed course work to apply for their certificates.

A study completed by Foothill's Institutional Research office in December 2018 found that from 2014-18, 34 students completed all of the requirements to earn Certificate of Achievement I, II or III, but 13 certificates were awarded during that period. In addition, there were nearly 40 students who lacked one or two classes to earn their certificate.

Tobias explained the current system to get certificates. Board members questioned why the certificates were not automatically awarded or a more streamlined process was not in place. John suggested informing students of their social responsibility to apply for the certificate to support the program that had given so much to them.

Curriculum

The program curriculum was reviewed. Allison solicited feedback for eliminating cartography from core course requirement with the reasoning that skills to use separate cartography software (Adobe Illustrator) were required when the program formed 20 years ago, but now GIS packages have excellent cartographic tools.

Maegan requests not to eliminate course, focus course on more relevant software. Stace suggests web focus in cartography, data visualization or graphics (possibly CS class, web friendly data visualization platform), seconded by several other members. Sharing content, scaling/device, core skill of interpretation of data.

Alexis reviews curriculum for GIST 11 and 12, cartography and how it's incorporated into teaching; agrees with suggestions for emphasis on data visualization and presentation of data. Allison notes that faculty across GIST 11/12/52/53 will work together to integrate cartography into those four courses as a vehicle to deliver education regarding data visualization.

Amadea suggests also industry need for advanced GIS that incorporates other artistic or editing software, Alexis agrees and provides other examples such as brochures vs 3-d maps vs other industry needs. Steve agrees and also John both suggest teaching GIST students how to tell stories/more marketing focus with maps, working with clients. Allison and board members agree that emphasis should be on GIST concepts because software and other applications will change over time.

The next curriculum change discussed was the elimination of the requirement for an internship to earn the Certificate III or AS degree. Allison explained that the reasoning behind this was that the college was no longer supporting offering a class specifically for GIS internships (due to lower than 20 average enrollment per quarter). Internship component will be an elective moving forward, and picked up by Workforce department. Teresa provides details on the internship guidelines and structure. Students must show up with their own internship. Discussion ensued about GIST board and community getting internship needs filled with program students and how to 'matchmake' internships.

Steve wants to continue internship program. Teresa provides details regarding Workforce support for internships and structure. Allison asks for feedback regarding internships requiring desk space vs remote working. John noted that desk space for interns is a major issue. Amadea provides details regarding shift in remote vs on-site work for industry, moving more towards in-person offices. John emphasizes importance of working independently and critical thinking to balance remote vs in-person.

Allison notes that online courses help provide this type of self-directed structure and organization and scheduling skills. Cindy from NASA notes importance of interoffice interpersonal skills gained through in-person internships. General consensus that on-site is preferred for internships but that remote can be incorporated similarly to industry practice of having in-person and online check-ins, but there are some security/IT restrictions as noted by Cindy from NASA (Amadea notes Lawrence Livermore Lab faces similar restrictions). Allison notes also the importance of internships as pathway for learning soft skills (grooming, social skills, etc) that cannot be taught in classrooms due to restrictions.

Board members ask for feedback regarding how they can help college with internships. Need to create matching service/market place for connecting industry to students. Tobias goes over current internship portal and Teresa says we can get one started. Group discusses possible processes for coordinating internships.

Marketing

The discussion turned to a look at marketing for the program. Allison called for ideas from board to increase exposure of the program in the region. Allison noted the recent success in the Facebook ad campaign and emphasized the need for more outreach to make the community aware of the existence of the Foothill GIST program.

Suggestions for increasing program exposure included offering webinars, offering meetup events, hosting outreach days for high school students.

Partnership with Archeology courses is already in place. Wants to expand target demographic of students to include upskilling computer professionals. Notes difficulty in having students taking GIST classes but not getting certificates or degrees, institutional research provided data that only 1/3 of all students who qualified for GIST certificate actually got one; Teresa notes solution is to auto-certify for those qualifying students. Advisory board also proposes other solutions like clearer communication during the capstone course, informing students how the certificates help fund college (social responsibility), also getting “expiring/rolling” certifications from industry (because many pay bumps require updating certification cycle; potential partner is ESRI). General consensus also to do more targeted outreach during quarter directly from faculty or college to students. Additional partnerships between EMT, BIO, CS, and other divisions/industries that have ties to GIST. Outreach events showcasing versatility of GIST. Title of certificate GIST vs Spatial Data Science.

Software

Allison requests feedback for current software used in GIST courses, see slides. AB suggests not adding GeoMedia Pro or Google Earth Pro, does suggest to include Google Earth Engine. Look for industry partners to help distribute costs of setting up virtual desktop client so that removes barrier to entry of high cost computer hardware. Allison requests to discuss funding from SWP or Perkins for these programs.

Program Learning outcomes

Allison requests feedback regarding program learning outcomes. Board reviews program learning outcomes. All members agrees regarding current outcomes.

Recruiting special populations

Allison requests feedback regarding recruiting special populations, see slides. Tobias suggests veteran populations, Allison agrees that military often uses GIS software and many military jobs offer GIS requirements. Suggestion of high school outreach and blending existing curriculum like math or geography to incorporate GIS ideas. Steve also suggests partnering with military recruiters to discuss class availability that would help military careers (During and post tour). Gen ed outreach. Student and regional organizations (maptime). Incorporate webinar, GIS day, CTE combined outreach.