Minority Report

Offered as companion to the Computer Science Department's 2022 Self Study
May 20, 2022

James Purtilo

The CS Department's Self Study is incomplete in ways which seem important to its intended purpose.

- While that study describes many ways we struggle with the consequences of increasing scale in our educational programs, it omits entirely any consideration of how we got here in the first place, thus denying us best opportunity for finding solutions. We can't fix what we haven't understood.

- The study omits key evaluation criteria which normally are used by the campus when examining a unit; it makes no mention of department governance conventions which have been prominent in the past, nor does it relate the department's present status to previous self studies; and it ignores members of the CS community without explanation.

- The study understates the impacts of our department's administrative dysfunction. We're no longer following our own rules; we're not explaining how funds are collected or actually used; we're losing opportunities and needlessly paying costs for want of basic services; and we no longer even pretend to assess quality in our programs or activities. The last available metrics on workforce engagement characterize our environment as toxic.

- While the study has been offered as a consensus of the faculty, it is not. Except for a rocky DIE survey late in the fall, our faculty as a whole had no opportunity for input to the study, which appeared as a draft in January. A week later the draft was branded final without changes, even though defects were flagged to the chair. The provenance of the study's recommendations is never explained, and those leadership-approved measures were the only topics put on the table for discussion at the retreat in May. The process was deaf to faculty who might have asked other questions or offered ideas for alternate recommendations.

The present minority report flags gaps in CS's self study. It lists some of the many hard questions which should be addressed if the college is to win best value from any external review, since no visitor can offer realistic advice if we leave them blind to relevant features. And based on facts such as are available to us now, this minority report puts forth the only known explanation to date for our trajectory over the last eight years.

MINORITY REPORT

The department's self study (hereafter "study") offers useful factual information, and it is nice to see many successes highlighted. However, the picture it paints is incomplete in ways which seem important to the report's purpose. It makes tangential reference to barriers we face, but it does not squarely address them, and thus could be perceived as more of a marketing brochure than an assessment.

If an administrative goal is to put lipstick on the pig, then CS can roll with this report, but we should do so knowing that our credibility diminishes when observers can plainly see fundamental problems which the document ducks entirely. The present minority report flags some of these gaps and poses questions the department's study should address.

1. Unanswered questions about accountability and root causes

At several points the study struggles to explain acute consequences of scale in our department – too many students, not enough staff – yet it never addresses how we became distressed in the first place. The most fundamental question not tackled is: Why is this so?

Everyone knows the symptoms at top level. With undergraduate demands already rising, in 2015 UM began admitting pretty much all applicants who expressed interest in CS. Class rosters exploded. And there is little mystery about the motivation: cash. In the same year, and with no evident stakeholder consultation, campus leadership enacted a differential tuition policy for these new majors. CS program growth continued unabated without commensurate adjustment in instructional capacity, advisement or management structures.

The crisis became highly visible in December 2017 when students launched a change.org petition demanding seats. It quickly garnered over 1000 signatures. An emergency administrative effort to manufacture seats defused the immediate crunch, and then we adapted management practices in order to limit the visibility of our shortcomings, even though not the shortcomings themselves.

No peer or near-peer CS department operates with such a stressed student-faculty ratio or against the headwind of these structural administrative deficiencies. Our operations fly in the face of all literature about best practices for winning sound undergraduate outcomes. Specific observations appear later in this memorandum.

The idea of monetizing high-demand majors by levying differential tuition while opening the flood gates was attractive to UM administrators well before 2015. Any organization optimizes around its reward structure, and this was no less true of the Office of Admissions, which historically had lived under the VP for Finance, meaning its culture saw the path to reward as winding through balanced books and uplifting diversity reports. What might happen with admitted students later was never their problem.

In fact Admissions has always been free to optimize for its needs with little regard to impact on programs. In turn, any check to disproportionate expansion always came as push-back from those charged with content delivery. This competition was arbitrated by the provost, whose job was to maintain a stable major base without jeopardizing quality.

That long-time equilibrium between cash and quality was disrupted by the alignment of a weak provost (Mary Ann Rankin) and even weaker CS Chair (Samir Khuller). Without push-back from seasoned administrators who understood what it meant to serve excellence, bean counters won.

That's what happened. What is unexplained is the breadth of responsibility for this epic failure in enrollment management. And those details are critical in the present CS assessment.

Departmental reviews define a basis for strategic planning, and we can envision that reviewers might offer advice which depends on knowing the genesis of our seats disaster. Unfortunately, no record has been released to evidence culpability or explain why we continue to experience its toxic effects a full decade after the earliest signs of trouble.

- Whose idea was it to *first* flood the program with undergraduates and *then* wonder about how to teach or advise them?

- Whether spurred by directive or consensus, there were healthful ways to have grown. Why didn't we use one?

- Did CS faculty treat this growth as welcomed, tolerated, protested or opposed? What does the record show? Are we all content with the impact on program outcomes? Has leadership even noticed?

- Campus messaging at the time of the policy's launch states differential tuition was intended to assist in the transition to expanded programs. Today we are seven years into the policy. When will we reach steady state and not need supplemental cash? Or will perpetual disaster justify perpetual invoicing?

- Campus messaging also asserted 25 percent of DT funds would go directly to financial aid. What are those numbers and is there a profile of recipients? Do CS majors benefit or are these funds socialistically skimmed for use by other majors? Is there any evidence of its use for financial aid at all? Was that aid message yet another throwaway line by unaccountable bureaucrats?

- If expansion was intended, then who paid with their job for a colossal failure in execution? Or was the growth a surprise? Did the left hand not let the right know what was going on? If so then who paid with their job for botched enrollment management? Either way, why have UM's leaders not righted the boat in at least seven years?

- No planning analysis was ever released to motivate or justify differential tuition policy. Did those in charge simply presume we could gracefully absorb hundreds of new majors without adjusting instructional capacity? On this the record is fraught. The study asserts CS received $4.3M in DT funds in FY2021, an amount (it says) which is consumed by the cost of today's insufficient number of teaching assistants. If this figure matches original projections then campus may never have intended to do more than hire teaching assistants; if projections were substantially different then our implementation over seven years has been deeply flawed; but what we witness today seems like the result of our campus having done no planning at all.

A forthright study would squarely address such questions. If disaster originated with a closed leadership structure which remains deaf to CS faculty while promulgating policy from above, then no advice about department practices will much matter; reviewers would best use their voice to bring visibility to threats posed by predatory campus leadership. If the problem instead lies within a department leadership team which doesn't understand its important role in mediating the dynamic between campus and its professoriate – perhaps, in their inexperience, they perceive their role as solely one of subservience to Main Admin, and thus bureaucratically hand down precepts from the mount – then reviewers might choose to draw scrutiny to the enfeebled CS leadership team and perhaps the college practices which allowed it to be this way.

If ultimately the evidence suggests that it is rank and file CS faculty who don't recognize our fraught trajectory (or perhaps simply don't care), then reviewers would offer best value by calling out cultural issues which let us duck ownership of the problems. Does the record show CS faculty pushing back on problematic policies? Or just emitting thin requests for new entitlements? Should tolerance of years' decline be rewarded with business value (e.g. establishment of a College of Computation) or is our insularity worthy of rebuke? A serious review deserves more than our silence on core questions.

Over seven years, new lines justified by the undergraduate seat disaster have been filled by professorial faculty who fundamentally serve the UMIACS research mission; instructional needs are increasingly met by less-expensive adjunct lecturers.[1] The number of students taught by tenure track faculty hired in the name of the seats crisis is small and continues to be vastly outpaced by Admissions; the number of students taught by cheaper, administratively pliable mercenaries (a campus trend) continues to increase. It seems odd that scientists who would never say "just add more computers" as a flip solution for all problems of scale in computation seem content to say "just hire more faculty" thinking this scales with seats. Why?

Possibly UMIACS expansion was the objective all along.

The picture is awkward. Based on what we have been shown, someone might conclude that the campus manufactured an exigent situation in order to justify aggressive hiring into research lines (convenient for UMIACS) with only token investment (more teaching assistants) to cover instructional obligations which are otherwise neglected and (as illustrated in this minority report) largely not tracked. What actual data might help someone realistically deny this hypothesis?

---

[1] Anyone skeptical of that statement is welcome to tell us the first candidate CS hired without countenance of the institute, then explain how some hires have been made to CS lines but without involvement of CS faculty. Explain how so few seats are filled by recent hires whose role was in great part justified their hiring.

2. Unanswered questions about education

The accountability section made reference to adverse consequences in our educational programs. What follows are supporting observations and the questions which remain unanswered in the study.

2.1 Undergraduate Curriculum

What of our core – the curriculum? We don't know. Not from reading the study, anyway.

Program outcomes are the pillars on which our bachelor degree is supposed to rest. They're our guide to implementation and thus how we are to be measured by the state. The provost's IRPA site asserts: "All current undergraduate programs have established goals for student learning..." It seems reasonable that a visit with program outcomes would be the first step for a self study charged with evaluating program health. However, there is no mention of our program goals in the study.

What might a reviewer have wanted to know? One key question might be whether our leadership even knows we have program outcomes which are tracked by the state, and then whether these criteria are ever communicated to new faculty as a guide. After all, it would be tough for colleagues to champion a state mission never shared with them.

Almost no CMSC *course* has defined learning outcomes (which are commonly required elsewhere on campus) so in fairness, it would be tough for a reviewer to confirm that our curriculum structurally ensures all students meet program goals as a function of course requirements. Still, while no program outcomes at UM are terribly specific, that such material is omitted entirely seems revealing.

Beyond outcomes, an observer might reasonably ask about the effect of years of course change as driven by the seats crisis. Even before the crunch our faculty gave little guidance about what constitutes sound upper level preparation. We don't tell students what is important; the students tell us what is important by what they take. Since the seat crunch, and freed from a hard obligation to serve outcomes, faculty generated even more upper level courses, chiefly to stimulate demand for what is convenient for us to teach near to our research. The number of pathways to graduation increased accordingly.

In light of the upper level course churn, on how many of those pathways will students no longer interact on teams? How many students graduate without design experience typical of real world projects? What level mathematical reasoning about algorithms, data structures and protocols is attained by all degree recipients? Has that level declined? We can't tell for sure, which is a pity since those questions all derive from official program outcomes, yet at top level an observer would find that many students appear to graduate without these qualities or experiences.

2.2 Undergraduate Specializations

CS created several specializations in recent years as noted in the study. They surely have advertising value to faculty who promoted them. How about value to students? On this there is not yet much record, and reviewers might reasonably want to know whether the market value of having one will justify the business overhead of maintaining them in the major. What's the return on investment?

The most recent tracks overlap strongly with one another and became approved without much study (see later section). For example, most pathways which win a Data specialization label simultaneously

satisfy the Machine Learning specialization. Most cyber pathways can typically satisfy Quantum's specialization just by adding a physics course.

This is not much differentiation among products, and none of the courses have been adapted to help students understand how our course motifs relate to the named fields. For example, the Cyber track surely has good content for students who might later work in that field, but nowhere do we even give a definition of "cybersecurity" much less mention other vast content areas which professionals consider part of "cyber" even if not taught here. In fact our curriculum lacks any 'big picture' course. Students interested in exploring CS (much less specializations) are left to discover the nuances on their own.

Students are not given domain-knowledgeable advising on specializations (see later section) nor priority for seats (they compete with all majors for access to courses.) By observation we know students often select tracks based on seat availability, not passion. Once students find they are close to completing a motif (perhaps as an accident of seat availability), they might elect a specialization for "resume appeal". Observers might wonder about our reputation after offering graduates who seriously lack engagement in specializations and can't define how their preparation relates to the field.

The record shows that our department was piloting courses for a specialization in Software Engineering, though well before the era covered by the self study. Hundreds of majors participated in one or some of its courses, with what appear to be spectacular outcomes in industry. This came to an abrupt halt when department leadership canceled the courses (in first week of a semester and with neither consultation nor notice), then blocked them from further consideration. Potentially the point could have appeared in either the administrative or community sections of this minority report, but regardless, reviewers might reasonably question how, say, a Quantum specialization can pop up virtually overnight while a thriving SE track (serving a sector in which most of our graduates ultimately work) remains blocked with its proponents unable in over ten years to earn a forthright explanation from department leaders.

Finally, since the last review, we killed a specialization in CS Education. This seems relevant to the study's education section yet it was omitted. The specialization had been crafted as part of a broader effort to address Maryland's long-term digital equity issues. With its demise, the digital divide widens. We are no longer equipped to work in that space. Our department professes concern for equity, yet apparently leaders will only advance policies from which they can profit. Reviewers might reasonably ask both the rationale and process for killing the CS Ed effort, since to date it has not been explained.

2.3 Meeting seat demand with STICs

One fundamental change in the last decade has been introduction of CMSC 38X courses. We know their effect on capacity – today they are critical to having enough seats. What is their effect on our quality?

The history: A decade ago we approved (with a divided faculty vote) a change to bachelor degree requirements so one upper level elective could be replaced by a combination of one-credit 3XX courses. At the time these were faculty-taught courses seen as enabling us to be responsive to tech trends while nevertheless still serving our interests in promoting critical thinking skills. Almost immediately, though, and with the seats crisis in full boil, leadership authorized STICs under 38X - student initiated and taught classes. The faculty writ large lost control.

38X use exploded and today the *South Harmon Institute of Technology*[2] model of content delivery handles a substantial portion of our seat load. (This semester we serve 672 CMSC38X seats, which likely translate into a couple hundred students using this option to replace one 4xx at graduation.) Budgetarily this is a success – it gets tuition-paying students into seats which are serviced by other students. Faculty get workload credit (and in some cases increments which cost less than for teaching a full overload) for endorsing a class. From a curricular perspective, though, this swaps faculty-vetted content which once supported program outcomes for tech training which structurally enjoys no known relationship with outcomes. No Field or Education Committee checks the content; administrators (who are desperate for seats) are solely responsible for deciding course relevance, and they know it when they see it.

We know these courses are popular and students prefer simpler training. Reviewers might reasonably want to know by how much we have diluted critical thinking skills which contributed to high rankings in yesteryear. Do we know? If faculty don't see evidence of impact, then potentially it is because we have chosen not to look.

2.4 The evolution of seats and how this affects our mission

Not just the number but also how CS seats are served has evolved substantially in the last decade.

At one time – some might say this was the era in which UM built a strong reputation in the field – all graduates of our program had content and experiences in common. They shared substantive upper level preparation taught by professorial faculty who often served as mentors as well. There was community. We advertise this today, though it is not what we offer.

Because of our curricular changes, the most content that we can say is common to all bachelor degree recipients is that they have taken CMSC 330 and 351. Our Balkanized 400-level offerings now make it possible for two students to graduate without any overlap on their transcripts. If they happen to meet later then any shared reminiscences as Terps may be limited to topics such as DOTS and Eduroam. Reasonable people might wonder what will be the effect on their long term ties with the campus.

In terms of professorial contact, students often meet lower-level requirements by being administratively declared prepared based on articulation agreements or exams, and those who sit the class see lecturers. (At this writing only 5 students are registered for regular seats taught by professorial CS faculty at 300-level or below in fall 2022, and it seems ripe for cancellation.) At the upper level much of our content is taught by lecturers, adjuncts, grad students and (as noted earlier) undergrads themselves.

Apparently CS students can now graduate without ever seeing a member of professorial faculty in front of a class in their major. Some students will wear our brand without ever having taken a serious project class from us, much less from tenure track faculty. How often these situations occur is something the study might have reported. As a statistical matter it is clear that most students graduate without having a meaningful conversation with professorial faculty. And no surprise. In some recent semesters, as many as 70 percent of professors offered no seats at any level, accounting for effort via administration, research or participation in labs on other campuses. We're justifying new hires via the seat crisis, but in light of research priority it will take years for recent hires to impact seat totals in any meaningful way.

---

[2] https://www.southharmoninstituteoftechnology.org/

[The logistics of on-boarding professorial faculty to solve a seats crisis are fraught. A new hire teaching one-and-one with fairly ordinary classes might optimistically need 10-hours/week effort, so call this a 300 hour resource gained in their first year. At what cost? The CS drill to attract that new hire is grueling. Presuming 30 candidate visits, each with a talk drawing 10 faculty attendees (optimistic) and 5 individual sessions (also optimistic), and adding modest overhead for APT meetings, a rough estimate is that we burn 600 hours of faculty capacity for the season. At least with respect to teaching capacity, we don't break even until the year after yielding two candidates – if that, given recruiting packages. As of this drafting, we are at a net loss in the present cycle. With one candidate 'accept' we have expended more faculty time than will be recovered for teaching next year. Readers are invited to mark up the back of an envelope with their own parameters but the point might be made: Battling the seat crisis by brute force methods and recruiting alone might help UMIACS but isn't working for CS instructional needs. Maybe it is time to try administering smarter, not just harder.]

One hard consequence of this evolution in who delivers our content is to mentoring. Talented students who are aggressive or supported by families having experience with higher education will always stand out; they get mentoring and opportunity. For others, not so much. Given our volume, their opportunity is capped by lack of thoughtful and informed mentoring. Whether or not mentored, the careers of most students launch without even a recommendation on meaningful letterhead. These trends increase the digital divide which some of us have fought for years to overcome. Reviewers might want to know why this department implements practices which increase structural inequity.

2.5 Advisement and metrics

The study describes undergraduate advisement, but omits the fact that none of the advisors who are available to all students have technical preparation in computation. They may play a useful role as the students' liaisons to our expansive campus bureaucracy, and perhaps offer big picture counsel, but unlike in our past, any potential of connecting with students via tech experiences in common is lost.

This is a fundamental shift which became complete in the era of the seats disaster. Students with questions about CS, industry or how our curriculum ties them together are left to their own resources. If they bring a question to advisors (we have little information about how often this happens and less indication that students are invited to do so) then the best we can presume is that they will be referred elsewhere. But to whom? By observation we know this is not faculty writ large. These conversations ought to be the norm, not exceptions. Reviewers may wish to know how we think students uniformly win great outcomes without faculty interaction.

At best the department's current model of advisement seems unassessed. At worst, in the rush to scale, we threw out the baby with the bath water, which is to say, in order to build a larger empire we tossed the value of technically-trained advisors. Students with career questions are on their own (or left to social media) for answers. When the department does give advice there is a sense it is driven by *our* needs. When we are desperate for inexpensive undergraduate teaching assistants, then the advice to students is "teaching experience is important"; when fee-paying corporate partners aren't enjoying exposure to enough prospective hires, then advice to qualified students is "interning with a corporate partner is important"; and when demand for our specializations is too low to sustain our marketing message, advice to students assures them that these tracks are important for careers, even though no

advisor has a basis to say why. If accurate, then these observations do not give confidence that our operation is student centered.

The study offers aggregated data on graduation/retention rates, but with little detail. We can find graduation/retention rates by transfer versus first time freshmen. What are the outcomes of students arriving from Freshman Connection? Direct Admits versus the Letters and Sciences diversion? Transfers? Observers know these all differ, sometimes dramatically. What are the details and simple explanations of where we churn majors in each pathway? The study does not say.

What role do the various related programs play in great outcomes? The Honors College? FIRE? Select minors? Our diversity programs? What is the observational support for a conclusion that students are better for participating in one or another of these in comparison to investing more into our major? We don't know. Longitudinal studies (which have been repeatedly recommended in the past) might help us connect later success stories with one or another good practice, program or course here. It would be a shame to implement policy changes now and, driven by belief and bias instead of illumination, toss out practices that had offered great value. We don't know from the study what these practices might be. Nobody doubts that we have great success stories, but cherry picking examples as if to prove the rule is how we do marketing, not science. At issue is not what we do for some students, but for *all* students.

Also on the topic of our (poorly named) limited enrollment program, the study asserts that admitted students having CS interest are nevertheless channeled to *undecided* status in LTSC (College of Letters & Sciences) over direct admission to CS by two to one, however there is no explanation of why. What are the criteria for determining these direct admits? By observation we know direct admits fail benchmarks and similarly that students who were declared undecided immediately place past them. How many are these and why? The study should offer a forthright description of our admission criteria and who is calling those shots. We can't improve what we can't see.

We know by observation that promising first time freshmen who expressed CS intent but were offered LTSC end up confirming elsewhere due to confusion over "undecided" status. Apparently we intimidate and then lose them to peer institutions that are willing to admit them as CS majors. How often does this happen? Is anyone tracking it? The effects of our opaque policies should be assessed.

In the graduate program, we know by observation that some masters students have no mentor for their scholarly paper or thesis work; we haven't enough members of graduate faculty to go around. We know that instructors who are not members of graduate faculty may supervise grad student work. How often does this happen and what is the effect on our program quality? Is the graduate college okay with this? We know students who did not meet published criteria were nevertheless admitted to our grad program (apparently to serve diversity needs) and then were left unsupervised. How often does this negligent advising situation happen and with what results?

3. Questions about administration

The study makes terse references to administrative challenges chiefly driven by scale. It does not color in the picture fully, which risks giving reviewers an understated message. These are some of the gaps.

3.1 Where rubber once met the road

The department had been organized around administrative bodies called field committees for years. FCs figure prominently in our official narratives and received serious attention in previous external reviews. Those familiar with us might thus wonder why there is no mention of them in the present self study.

We have FCs today. We're not entirely sure who is on which committee, since the chair never published committee assignments at start of the academic year (as once was routine.) This has caused confusion throughout the year. It would have been nice to know who is on leave versus tasked in administrative duties, and also who to contact with questions about, say, learning outcomes or awards. Or maybe the expectation is that nobody is really doing such things anymore.

And that seems to be true of field committees. Though they once handled curricular questions specific to respective areas, served as the basis for collaboration on multi-PI research proposals and tracked the content of courses to keep content fresh and relevant, most seem to have gone dormant. (The SE/PL committee has not held a meeting in well over twelve years, though for a while matters which it might once have handled were decided by a small subgroup to serve their interests, an exclusionary practice.) In this sense, omission of FCs from the study might reflect reality, but still, reviewers might reasonably want to know if FCs were replaced or just forgotten, and how (or if) those tasks are performed today.[3]

This is not to beg rejuvenation of FCs, but to point out that the half-way state is neither administratively useful nor socially healthful – they define another artificial line to fragment the community, which was pointed out in previous reviews. A reviewer today might want to know how we acted on prior advice.

---

[3] FCs still exist as mailing lists intended to reach faculty when assigning courses. These lists have uncertain membership and, because of exclusionary practices of FCs, help preserve the sense that our department is an ecosystem of competing clubs rather than a single faculty.

3.2 Shared governance

If not via FCs, then the responsibility for exercising important professorial controls over our programs and operations falls to a committee of the whole – the faculty.

Awkwardly, there is no record of a faculty meeting since March 12, 2014.

That record is consistent with the log of traffic on the faculty email list.

The elected body to represent faculty is the Council. The same server above shows no activity since February 20, 2017. Because there is no longer a published roster of committee assignments we don't know who is on council today, and it is not clear that an election was held this academic year. Probably not though. In mid-year, when the merit pay news broke, we had a pants-on-fire emergency to figure out who was on the merit pay committee, then a couple procedural do-overs as those in charge had to discover rules. We had no more elected a council last year than we did a merit committee.

What of FFLs? These "Friday Faculty Lunches" first made their appearance eight years ago. And that is what they are – lunches. They were organized to specifically *not* involve official business. They are just for gab, or as conducted in recent years, for leadership to hand down pronouncements over free food. We occasionally see an FFL agenda, but if the faculty actually got to make a decision at FFL (we don't) then a reviewer will wonder why we do not follow our own rules with respect to practices and records.

This leaves the Education Committee. For this we have a record of meetings. It isn't accurate, but there is a record. We know from faculty email that the committee met since the 2020 date shown. (We even had the rare quorum at some of them.) We just don't know for sure what happened at the meetings, though campus records confirm CS added a program and changed a number of courses in this period.

DEPARTMENT OF
COMPUTER SCIENCE
PEOPLE RESEARCH EDUCATION NEWS & EVENTS COMMUNITY DIVERSITY GIVING

Meeting Minutes - Education Committee

All   Department Council   Education Committee   Professorial Faculty   FFL

Type	Date	Files
Education Committee	November 20, 2020	• Meeting Agenda • Meeting Minutes
Education Committee	October 16, 2020	• Meeting Agenda • Meeting Minutes
Education Committee	April 24, 2020	• Meeting Agenda • ML Revised List • Meeting Minutes

Faculty mail traffic concerning Ed Comm meetings often indicates confusion about what is on agendas, but procedures are not a barrier to action. The record shows that leadership proposals which had been tabled at Ed Comm meetings were implemented anyway. And the elimination of our specialization in CS Education was initiated by department leaders and processed through campus without notice to or consultation with CS faculty at all. It diminishes faculty motivation to attend meetings when leadership will simply do what it wants regardless of faculty input. Reviewers might ask whether faculty would show more regard for our role in education if leadership would show us less contempt.

3.3 Lab and operations

The first decade of our new millennium was a lean time for the college, whose units tightened the belt accordingly. In order to protect the research mission from predation (putting resources modestly more out of reach of demands for teaching or business needs) the college informally treated CS and UMIACS as one faculty, then explicitly concentrated funding in the Institute. By 2012 the CS department lab and business staff size was below critical even before the worst of the seats disaster closed us in, and its lab had ceased providing support for research in favor of maintaining aging business operations.

Staff size (still critically low) is touched on in the study, though the extent to which we are failing due to lack of services is not fully illustrated. Our IT infrastructure (it is no longer fair to call it a "lab") has seen improvement in the last decade, though we still have challenges. At issue here, though, is the legacy of prioritizing resources to UMIACS. CS grants are charged overhead as if to support research, yet no particular research services are provided and the basis for charging is unexplained; funds apparently go to maintain ordinary business operations. Any of the (limited) campus funds which normally would have supported office needs still apparently accrue to UMIACS, a vestige of the old policy. In effect, CS faculty with grants pay overhead to support UMIACS research needs. There is little motivation for a CS chair to

broker a better arrangement, since their research lives in UMIACS too. A better deal for CS risks the quality of their research life after they are done serving as chair.

The study (which otherwise has scant detail on the budget) should explain how this works. Include the policy which defines "lab fees" (a document which has been requested but denied in the past.) Include the MOUs which govern CS and UMIACS relationships. Offer transparency to the budget. No reviewer can offer realistic advice without understanding the constraints binding this department.

4. Questions about culture and community

This section is a grab bag of observations which seem at odds with the study or are not covered at all.

4.1 Relationship with UMIACS

Not only does UMIACS come up in several points in the present minority report, but its relationship with CS has been a topic of concern in several previous external reports. By appearances those early concerns remain unaddressed. Did we solve the problems? Did we forget what those reviewers said? Did we gloss over the issues which remain pressing today? Reviewers might reasonably have wanted to see such questions addressed in the present study.

4.2 Thriving Workplace versus toxic workplace

A well-regarded survey instrument from Gallup helps leaders to understand employee engagement – the conditions which affect employee productivity, health, turnover and much more. These insights typically show an enterprise where to focus its efforts to improve work environment with best effect. Companies with engaged employees are more productive, with less turn-over, fewer lost days for health reasons, lower accident rates and greater profits.

UM conducted such engagement surveys (the Gallup product branded here as Thriving Workplace) in spring 2016, fall 2017 and spring 2019. The results show UM's workplace is challenged.[4] This surprised nobody, but nevertheless someone in leadership deserves credit for exercising initiative in order to get a handle on where we are. How units acted with the information is another matter.

The 2019 instrument profiled CS as among the lowest performers on the already challenged campus. How was this received by the department and what remedial steps did leadership take based on the information? Or are we again dealing with community questions blind to where we were before and without the value of prior data? Reviewers might want to know how well we handle advice as a department. The study should address those available data.

---

[4] Gallup teaching materials contain examples that tell of the corrosive effects on a workplace when as many as two percent of employees are "actively unengaged". UM's early surveys showed 16 percent. This overall engagement put UM among the lowest-performing organizations of the many thousands profiled by Gallup.

4.3 Diversity, Inclusion, Equity

Administrative support here has been inequitably distributed for many years, not only in the era of our seats disaster and reduced staffing. Because there is no accountability, stakeholders miss opportunities for no reason other than a key administrator may choose not to respond to a request. That is impactful to us. The impact to students from under-represented groups, however, can be disproportionately large.

To illustrate, our web site offers a page for students from under-represented groups to apply for travel funds to attend relevant conferences. Unfortunately, the mail is not monitored. We can wonder what a student may feel after observing our lavish opportunities – advertising how woke we are in promoting DIE – and nervously reaching out, only to receive silence in response. We have observed disparate treatment not just in the diversity operation here, but in on-boarding student employees, awarding of scholarship opportunities and more. Careless disregard by an administrator who answers to no one may be de rigueur in working with faculty, but done to a student such treatment is unconscionable.

In moving to the new Iribe building we quashed engagement activities which helped students connect with one another as technologists, replacing them in order to promote identity-based programs which could be used as basis for fundraising. How is that working out? Per the study, apparently we raised a few million dollars over the last several years, spent it on trope programs which chiefly keep diversity staff supported, and today have what looks like a net reduction in under-represented students in CS. Perhaps unsurprisingly a recommendation of those who are supported by these programs is to double down on spending.

Is department interest in DIE genuine? There are good reasons to wonder.[5] One of the study's several authors piously signals his virtue via a .sig in all of his email:

> *It is one thing to be in front of someone and not be seen. It is quite another to not be in front of someone and not to have your absence noticed. I think we underestimate the role of the second kind of invisibility in perpetuating inequity.* -- Charles Isbell

The study takes that invisibility to an entirely new level by offering a document which eliminates (today the word is "cancels") some members of the CS community altogether.

A forthright self study would examine more closely the return on investment into these programs, and in particular connect them back to learning outcomes. Are all students winning equitable preparation? The study should offer a dispassionate analysis.

4.4 Messaging and exclusionary practices

The study is presented as if a consensus of the faculty. It is not. Except for a rocky DIE survey in late fall, faculty as a whole were never asked for input, and even on the survey, respondent material was cherry picked and edited to advocate the reverse of what was offered. The provenance of recommendations in this study is not quantified; they simply appeared. When the draft study was circulated in late January

---

[5] Goal 4 of the study is worthy: "Foster diversity and inclusion in the entire computing community." However the recommendation under it immediately makes this a function of fundraising. Apparently we don't follow equitable practices which are free; here, diversity is about the money.

several deficiencies were flagged to the chair, who made no changes before advancing the report. Later, leadership selected breakout groups of 6 to 8 people at the retreat, tasking each group to come up with reasons to support the leadership-approved recommendations. These are practices reminiscent of an authoritarian regime in the era of the cold war, not an egalitarian faculty. The report should explain how those recommendations were generated, if not also offer a do-over to invite broader involvement.

The messaging to CS faculty offers more clues of the class structure here. Leaving aside the cancellation of some faculty, the whole faculty is often kept in the dark about key developments in the department. Major grants are won and large centers established with an internal note only perhaps coming after the fact. Nothing says "valued colleague" better than learning of important department news from outside media. In July of last year we in the proletariat class learned we have a new senior colleague and holder of a Brin Chair – a surprise since his name never appeared in conjunction with recruiting throughout spring. We learned the news from outside media. (Later we discovered UMIACS circulated a note to its faculty. Apparently you need to be in the club to learn what's going on with CS lines.) These messaging practices demonstrate contempt for those not in the club. Colleagues are consulted; we're not getting notification. The study should address how messaging decisions are formulated and implemented.

4.5 Opportunities and threats

A proper analysis would examine external threats and opportunities (not just internal strengths and weaknesses.) Mostly those were omitted from the study, but we will flag obvious ones:

- Early last year the provost abruptly resigned with a few weeks of notice, then was observed out looking for a job. What's up with that? After the initial announcement there was an effective blackout of details. No chief academic officer of a large R1 institution makes abrupt changes without a reason. What is that reason and does it impact the climate for CS on this campus?
- A recent AAUP/AFSCME audit[6] warns of UM's increasing administrative base and decreasing faculty base. This seems consistent with the perception that the CS situation reflects ongoing efforts to replace professorial faculty with lower-cost and more pliable at-will employees. How much of today's differential offering of services in CS reflects an intentional squeeze of CS-only faculty in order to press them to move on?
- When launched several years ago, UM's expensive Terrapin Teachers (rebranded from Texas's UTeach) promised dramatic increase in production of STEM teachers. The FIRE program (also brought from Texas by the previous provost and her friends) became the most expensive GenEd seats on campus while promising new research opportunities for students. The Honors College was refactored in important ways (chiefly with University Honors) to streamline operations. Each of these today shows outward signs of distress, yet observers see no campus effort to conduct even the routine reviews (as would have been the practice if leaders followed rules anymore.) Each also appears to be reducing their levels of professorial involvement. Presuming CS would part ways with our insular past and engage with the campus in promotion of computational thinking skills, what does that distressed climate foretell for our prospects for collaboration?

---

[6] https://www.marylandmatters.org/wp-content/uploads/2022/04/Bunsis-Maryland-College-Park-financial-analysis-March-202281.pdf

5. Conclusion

Many of the questions raised here are clearly about down-in-the-weeds practices of running a program. If the study doesn't address them then probably it tells us these questions don't have healthful answers. We need them though, and diligence demands that we come up with them. Whether my way or another way, these issues facing the department should be handled *some* way.

Unfortunately, given the path we are on, we will only rediscover the importance of serious tradecraft in managing academical systems once we suffer failures due to its lack. Commonly a self study would begin with a clear summary of where the unit was as of the previous review in order to discuss the trajectory. This study offered doesn't tell us where we have been and is blind to where we are going. Lacking in situational awareness (or perhaps simply in concern) we will pay high costs to reinvent basic practices instead of building on ones that worked. The study offers no sober prospect of serious growth as a department. It takes a special naiveté – or perhaps hubris – to talk of grandiose expansions (e.g. a new college) when we are not even doing the easy stuff today.

This minority report began with a question of accountability: Who is responsible for our seats disaster and its many consequences? The answer seems to be "all of us." Campus leaders unquestionably sought the rising tide of cash from an ocean of CS majors (differential tuition) and expansive research portfolios (revenue from indirect rates on grants.) The barriers which could limit their avarice are two: a faculty intent on maintaining quality of instruction, and an experienced leadership team which might insist that new faculty whose lines were justified by increasing seat demand have something to do with education. Servicing new seats under those terms is costly and will marginally diminish the capacity of professorial faculty to monetize research. It imposes limits to growth.

The strategy to free us from such limits, apparently, is to bind the quality of our work life to research in UMIACS while shifting CS content delivery to lower cost at-will employees, streamlining CS practices and thinning out CS's IT and office operations. Hollowing out the department required appointment of unit directors whose lack of experience left them administratively at the mercy of campus bureaucrats who guided them based on needs of college. Or maybe ones who just don't care. Serious scholars among our colleagues might rightly object to the impact on CS program quality but they would do so at jeopardy of the quality of their dual life in UMIACS. Write your papers, bring in the DRIF, teach the grad courses that are useful to recruit research assistants and enjoy being in the club. Agitate? Good luck getting services or grad students with your CS-only appointment. Plan on having club members define an oppressive CS workload policy soon.

At least with regard to our undergraduate program we have ceased being a manufacturing industry – defining the field by carefully preparing scholars to exhibit talents and temperaments according to a design. We've become a service industry, where students drop in to take what they want. We should ask if they want fries with that on their way through, though for the most part we are too self-absorbed for even that. Career success is wholly on them. It's a clear message to faculty: Idealistic caring is for losers; offer the minimum needed to constitute a shallow program and get back to making money.

The study ducked hard questions which would have had hard answers. I assert we can do better.