

Improving ICS: A Plan for Action

ICS Improvement Plan Working Group
Henri Casanova, Philip Johnson, Peter Sadowski

January 10, 2020

Contents

1	Motivation	1
2	Management and Reporting Structure	2
3	Tasks	2
3.1	Survey current faculty	3
3.2	Survey prospective faculty	4
3.3	Design faculty assessment system	4
3.4	Survey current graduate students	5
3.5	Survey former graduate students	5
3.6	Create a graduate ombudsman	6
3.7	Survey current undergraduate students	6
3.8	Survey former undergraduate students	7
3.9	Create an undergraduate ombudsman	7
3.10	Review and improve course evaluation system questions	8
3.11	Comprehensive undergraduate curriculum review and revision	8
3.12	Create a Community Advisory Board	9

1 Motivation

The external evaluation indicates that ICS is an “underperforming” department in at least the following ways:

- Research: For example, only half of our faculty have extramural funding.
- Teaching: Our graduate and undergraduate curricula have significant problems; our enrollment is stagnant while mainland enrollments are skyrocketing.
- Service: The local community is not satisfied with our workforce development capabilities.

Because of these and other issues, the ICS Department appears to have lost the confidence of the UH administration. Traditionally, the ICS faculty responds to criticisms with comments like “Actually, we’re better than you realize”, or “How can we do better if you don’t give us more resources?”

Neither of these answers are acceptable any longer, and if the ICS Department does not make significant changes, the administration will make them for us. This document proposes a response which is intended to begin the process of restoring administrative trust in us. This will not happen overnight, of course, but rather through stepwise incremental changes with visible outcomes over the course of several years that

provide evidence to the administration that we are committed to operating differently in the future than we have in the past.

We must begin by acknowledging that the ICS Department has severe structural and cultural problems which might be (somewhat brutally) characterized as a form of *professional narcissism*. The ICS faculty too often behave as if they have no other obligations beyond their own professional (or personal) self-interest. The culture of the department aids and abets this narcissism with a long history of a hands off, anything goes, honor system approach to faculty management. Underperformance, either individually or collectively, not only has no consequences, it is not even acknowledged until it is forced into the open by an external evaluation.

This problem can be fixed, because this narcissism is not a personality defect but a cultural and organizational one. First, we must allocate time and resources to listen to and learn from a variety of ICS stakeholders about their needs and how we can better serve them. This is a fundamental change from the current culture, which emphasizes a we-know-best, inward-oriented, ivory tower approach to decision making. Second, we must implement ways to assess and improve outcomes for all of ICS's stakeholder groups. Yes, we need to improve ICS faculty outcomes regarding teaching, research, and service, but we also need to elevate other ICS stakeholder groups to first class status. This means, for example, assessing and improving undergraduate outcomes, community workforce development outcomes, and even prospective ICS faculty outcomes.

2 Management and Reporting Structure

It is easy to say we're going to change, it more difficult to define the actions we will take to change, to provide visibility into these actions for the administration, and to show that engagement with the actions is department wide, and not just heroic actions on the part of a few. But this is what must happen to regain the trust of the administration in our ability to govern ourselves.

So, we propose to change the culture of the department through a multi-year, incrementally developed project called "Improve the ICS Experience". The most important feature of this project is to define improvements to the ICS experience in terms of improving the experience of four stakeholder groups: the ICS faculty (both current and prospective), ICS undergraduates (current, former, and prospective), ICS graduate students (current, former, and prospective), and the local high tech community (including other units with UH, as well as Hawaii-based high tech organizations). In order to improve the experiences of these stakeholder groups with ICS, we must first allocate time and resources to find out what their current experience is, then work with them to determine ways we can improve it. The external evaluation demonstrated that we are out of touch with our stakeholders; we need to fix that.

We organize this project into three levels. At the top is a Coordinating Committee that is led by the ICS Chair. The Coordinating Committee provides a single point of contact to the UH Administration, rolling up results from all subcommittees into reports that make our progress toward improvement (or lack thereof) visible.

Beneath the Coordinating Committee are four subcommittees, each charged with improving the experience of a single stakeholder group. Each subcommittee has its own Chair. We propose that the ICS Associate Chair lead the Improve the Faculty Experience subcommittee, that the ICS Graduate Program Chair lead the Improve the Graduate Student Experience chair, that the ICS Undergraduate Program Chair lead the the Improve the Undergraduate Experience subcommittee, and that the ICS Advisor lead the Improve the ICS High Tech Community Experience subcommittee. Each subcommittee is responsible for defining and prioritizing Tasks to improve the experience of its stakeholder group, and reporting results from its work upward to the Coordinating Committee.

Tasks are where the rubber hits the road. Tasks are short-term projects with defined outcomes that support improvement in the experience of their associated demographic group. Each Task has a single Owner. The Owner can enlist others to help carry out the task, but is the one ultimately responsible for its timely and successful conclusion. It is expected that all faculty will participate as Owners of at least one task per semester in order to show the administration that the department as a whole is committed to

cultural change.

Once a task is completed, it will often result in lower effort, ongoing (or periodic) “maintenance” activities. For example, once a Faculty assessment system is designed and put in place, the assessment process must be carried out yearly, and someone has to do work to make that happen. It is the responsibility of the subcommittee chair to ensure that the maintenance activities associated with all of its Tasks are carried out, and how that happens. For example, the subcommittee chair could decide to create a new Task, once per year, to carry out the activity, and enlist appropriate faculty to carry it out. Alternatively, responsibility for maintenance could be put into the hands of one of the traditional ICS standing committees, such as the Curriculum Committee.

Figure 1 illustrates this organizational structure with some initial tasks.

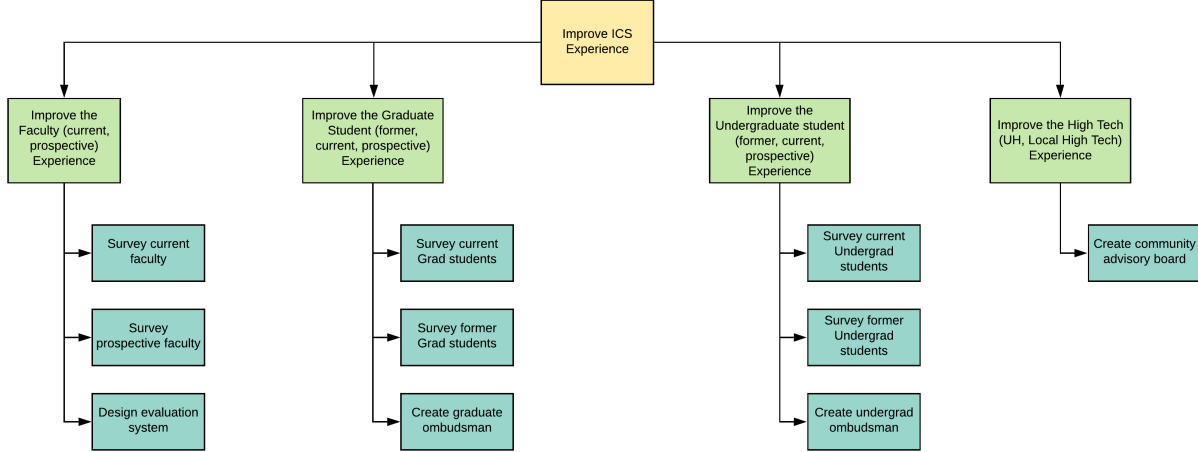


Figure 1: An initial work breakdown structure. More tasks will be added as a result of engaging with stakeholder communities.

3 Tasks

We propose an agile management process, in that we will not try to comprehensively specify all Tasks in advance. Instead, we will initially define and execute the 6-10 highest priority Tasks. We expect that the outcomes from current Tasks could result in new Tasks and/or change the priority of existing tasks.

The following subsections propose the initial set of Tasks to be executed in this project.

3.1 Survey current faculty

Name:	Survey current faculty regarding their current experience
Subcommittee:	Improve Faculty Experience
Members:	Owner: TBD, Others: TBD
Goal:	Conduct interviews with current and former ICS faculty members to solicit what they perceive to be the problems with their current experience, and what they would like to see changed, and what they would like to see retained.
Duration:	1 month (4 hours/week)
Deliverables:	A document with anonymous comments from faculty about their experience, along with a set of recommendations for improvements and changes to the department. One or more of these recommendations could become the basis for future Tasks.
Status:	Not yet started

3.2 Survey prospective faculty

Name:	Survey prospective faculty regarding their interview experience
Subcommittee:	Improve Faculty Experience
Members:	Owner: TBD, Others: TBD
Goal:	In recent years, we have interviewed candidates for faculty positions who have gone elsewhere. Call them to ask for their frank evaluation of our department from the perspective of a candidate. What did they like? What did they not like? What caused them to choose a different position?
Duration:	1 month (4 hours/week)
Deliverables:	A document with anonymous comments from prospective faculty about their experience, along with a set of recommendations for improvements and changes to the ICS department to make it more attractive to prospective faculty. One or more of these recommendations could become the basis for future Tasks.
Status:	Not yet started

3.3 Design faculty assessment system

Name:	Design an objective, quantitative assessment system for faculty teaching, research, and service
Subcommittee:	Improve Faculty Experience
Members:	Owner: Nodari Sitchinava, Others: Henri Casanova, Peter Sadowski, Philip Johnson
Goal:	The ICS Department currently has no system for measuring faculty performance with respect to teaching, research, and service. The goal of this task is to design a system that provides a way to assess faculty along the traditional dimensions of teaching, research, and service. It should also provide guidance to faculty and the department as a whole regarding areas in which they should improve. The system can be administered yearly and should require as little subjective evaluation as possible.
Duration:	3 month (4 hours/week)
Deliverables:	A document that specifies a proposal for a quantitative assessment system, along with example assessment of faculty members. This document will then be circulated to the faculty for review.
Status:	In progress

3.4 Survey current graduate students

Name:	Survey current graduate students regarding their ICS experience
Subcommittee:	Improve Graduate Student Experience
Members:	Owner: TBD, Others: TBD
Goal:	Conduct interviews with current graduate students to collect data regarding their ongoing ICS experience: what they wish was different, and what they would like to see retained.
Duration:	2 months (4 hours/week)
Deliverables:	A document with anonymous comments from current graduate students about their experience, along with a set of recommendations for improvements and changes to the ICS department to make it more attractive to this stakeholder group. One or more of these recommendations could become the basis for future Tasks.
Status:	Not yet started

3.5 Survey former graduate students

Name:	Survey former graduate students regarding their ICS experience
Subcommittee:	Improve Graduate Student Experience
Members:	Owner: TBD, Others: TBD
Goal:	Conduct interviews with former graduate students to collect data regarding their prior ICS experience: what they wish was different, and what they would like to see retained. This survey will also provide information about how well our program prepared them for their current employment.
Duration:	2 months (4 hours/week)
Deliverables:	A document with anonymous comments from former graduate students about their experience, along with a set of recommendations for improvements and changes to the ICS department to make it more attractive to this stakeholder group, and to better prepare them for the workforce. One or more of these recommendations could become the basis for future Tasks.
Status:	Not yet started

3.6 Create a graduate ombudsman

Name:	Create an ombudsman for graduate students
Subcommittee:	Improve Graduate Student Experience
Members:	Owner: TBD, Others: TBD
Goal:	The external evaluation process uncovered disconcerting failures in ICS teaching and research that had gone unnoticed and/or unaddressed by the Department. To prevent this in future, create a mechanism for graduate students to safely and confidentially notify the Department and/or UH Administration about problems with teaching and/or other ICS environmental issues. This procedure should align with current UH procedures for reporting personnel problems. The mechanism must ensure that all graduate students are regularly notified that an ombudsman is available, what kinds of problems are appropriate to report, and how their reports will be handled.
Duration:	4 months (4 hours/week)
Deliverables:	A document proposing how the ombudsman process will work, along with the results of a pilot study describing the results of deploying this process is deployed for one semester.
Status:	Not yet started

3.7 Survey current undergraduate students

Name:	Survey current undergraduate students regarding their ICS experience
Subcommittee:	Improve Undergraduate Student Experience
Members:	Owner: TBD, Others: TBD
Goal:	Conduct interviews with current undergraduate students to collect data regarding their ongoing ICS experience: what they wish was different, and what they would like to see retained.
Duration:	2 months (4 hours/week)
Deliverables:	A document with anonymous comments from current undergraduate students about their experience, along with a set of recommendations for improvements and changes to the ICS department to make it more attractive to this stakeholder group. One or more of these recommendations could become the basis for future Tasks.
Status:	Not yet started

3.8 Survey former undergraduate students

Name:	Survey former undergraduate students regarding their ICS experience
Subcommittee:	Improve Undergraduate Student Experience
Members:	Owner: TBD, Others: TBD
Goal:	Conduct interviews with former undergraduate students, both <i>alumni</i> and <i>students who switched majors</i> to collect data regarding their prior ICS experience: what they wish was different, and what they would like to see retained. This survey will also provide information about how well our program prepared them for their current employment, and what we can do to address retention.
Duration:	2 months (4 hours/week)
Deliverables:	A document with anonymous comments from former undergraduate students about their experience, along with a set of recommendations for improvements and changes to the ICS department to make it more attractive to this stakeholder group, to better prepare them for the workforce, and to retain them within our major. One or more of these recommendations could become the basis for future Tasks.
Status:	Not yet started

3.9 Create an undergraduate ombudsman

Name:	Create an ombudsman for undergraduate students
Subcommittee:	Improve Undergraduate Student Experience
Members:	Owner: TBD, Others: TBD
Goal:	The goal of this is similar to the <i>Create a graduate ombudsman</i> task, though the implementation might be different due to differences in the stakeholder group.
Duration:	4 months (4 hours/week)
Deliverables:	A document proposing how the ombudsman process will work, along with the results of a pilot study describing the results of deploying this process is deployed for one semester.
Status:	Not yet started

3.10 Review and improve course evaluation system questions

Name:	Review and improve CES
Subcommittee:	Improve Undergraduate Student Experience
Members:	Owner: TBD, Others: TBD
Goal:	The current set of questions in the UH course evaluation system contain many redundancies, potentially affecting the quality of responses from students. This task will improve the quality of data from course evaluations by reviewing current questions and creating a non-redundant set of standard questions to be included in all ICS course evaluation questionnaires.
Duration:	4 months (4 hours/week)
Deliverables:	A document proposing the standard set of questions to be included each semester.
Status:	Not yet started

3.11 Comprehensive undergraduate curriculum review and revision

Name:	Comprehensive undergraduate curriculum review and revision
Subcommittee:	Improve Undergraduate Student Experience
Members:	Owner: Guylaine Poisson, Others: TBD
Goal:	The external evaluation identified several problems with our undergraduate curriculum, including: (a) content of existing courses may not always be appropriate; (b) curriculum may not align with best practices (ACM, IEEE, ABET model curriculums); (c) lack of alignment with Computer Engineering curriculum; (d) excessive prereq chains; (e) lack of input from other stakeholder groups; (f) students do not consistently program throughout their degree program. The existing curriculum review process is ad-hoc and driven by “local” needs. It is time to do a top-down, comprehensive review of our curriculum which starts with input from stakeholder communities (alumni, local high tech community, computer engineering, current students), and which includes research on best practices including model curriculum and peer departments, and results in a major re-visioning of our curriculum which takes into account the limitations of our current FTEs and improves the quality of education our department can provide to its undergraduates.
Duration:	4 months (4 hours/week)
Deliverables:	A document that begins with a needs assessment and results of surveys, then proposes a re-envisioned curriculum, including detailed course content for core courses.
Status:	Not yet started
Issue:	How to do this while day-to-day business is going on (“hold” on curriculum changes?)

3.12 Create a Community Advisory Board

Name:	Create a Community Advisory Board (CAB)
Subcommittee:	Improve ICS High Tech Community Experience
Members:	Owner: TBD, Others: TBD
Goal:	First, obtain commitments of participation from representatives of our community (including other units in UH, the UH Administration, and local high tech organizations) in an Advisory Board. Second, run the initial meeting (which afterwards will happen annually). The goal of the CAB is to solicit viewpoints on how our department can better serve the community. Members of this board only need to commit to one meeting at a time, although we hope that a core group will persist in order to provide continuity. At the first meeting, we will present this project plan for review. At subsequent meetings, we will present the results of the tasks we have completed during the previous year.
Duration:	1 months (4 hours/week)
Deliverables:	Minutes of the first meeting, along with recommendations from the representatives for ICS improvements. Some of these may become Tasks.
Status:	Not yet started