

Project Align Final Report

Executive Summary

The College of Chemistry (CoC) launched a financial and operational deep dive process entitled Project Align in June 2020 in response to Academic Finance Reform, which was initiated by the Executive Vice Chancellor and Provost (EVCP). Academic Finance Reform proposed a new financial model to allocate campus resources to academic units based on enrollments and degrees conferred. Under this change, the College is projected to receive an annual reduction of about \$4 million, which represents about 30% of its operational budget. Project Align aimed to identify financial opportunities and strategies to further drive cost efficiency, develop innovative solutions for increased resources, and achieve financial sustainability under the new funding model. The College's two academic departments—Chemistry and Chemical & Biomolecular Engineering—are regularly ranked among the best in the world. Given the negative financial impact and challenges presented by Academic Finance Reform, the outcomes from Project Align are intended to maintain the College's preeminent standing and ability to fulfill its institutional mission.

Project Align was completed through the work of 25 faculty and staff members across the College and the campus, including those from the College of Engineering, Rausser College of Natural Resources, and Division of Biological Science. The work was organized through five project teams:

- Building Infrastructure and Facilities
- General Operations and Administration
- Instruction
- Philanthropy and Revenue Generation
- Research Facilities and Shops

Project teams met regularly to discuss and develop multiple strategies for cost savings and/or revenue generation. To facilitate the formulation of proposals, peer programs from a total of 17 private, public, and UC institutions were asked to provide data about their departments for FY2019. Aggregated data received were shared with the project teams in an effort to inform their development of ideas.

An external advisory board or Decision Review Board (DRB) was formed to review recommendations proposed by each project team. The nine members of the DRB represented faculty, staff, and alumni from UC Berkeley, peer institutions, and private industry who have expertise and experience in the academic and/or financial operations where they are located. They provided counsel, asked probing questions, and shared their impressions about the proposed strategies to help enable Dean Douglas Clark, the Decision Executive, to decide whether to accept, reject, or revise each of the proposals. The DRB met three times during Project Align’s 10-month timeline.

Project Team Overviews and Proposals

I. Building Infrastructure and Facilities

The Stull Act has severely constrained what the College and other academic units can do in terms of performing their own renovations due to the limit of \$50K for in-house projects. Furthermore, for capitalization reasons, the campus limits the budget of so-called mini-projects to \$35K, which further restricts what the College is able to do for renovations. Together with another project team, Research Facilities and Shops, this team interviewed Vice Chancellor for Administration Marc Fisher, Chief Campus Counsel David Robinson, Capital Projects Director Shannon Holloway, and a few representatives from other concerned units on campus. The College was encouraged to continue having discussions with the campus in order to collaboratively develop feasible solutions. Some may require escalation to the UC Office of the President. Based on the College of Engineering’s experience, the project team believes that developing a master space plan could benefit the College in the long term. Instituting an annual cleanup process of old equipment and supplies could also facilitate reclamation of space. Summarized below are the specific proposals and the estimated annual savings to the College, ranging from worst case to best case.

| Proposals | Implementation Control | Status and Timeline |
|--|------------------------|--|
| Mini Projects – increase the campus administrative limit for mini projects to \$50k, as well as the trades that can be associated with mini projects. <ul style="list-style-type: none"> The campus limits the budgets of mini projects to \$35k for capitalization reasons, but \$50k is the state allowed limit. Currently mini projects cannot involve certain trades, including design, carpentry, metal work, plumbing, or other professionals. | Campus | Discussions are underway with VC Marc Fisher and AVC Sally McGarrahah to raise the limit on mini projects from \$35K to \$50K. Timeline: 3-6 months |

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| <p>Shops Consolidation - consolidate campus shop efforts to maintain steady workloads and consistent recharge rates across units.</p> <ul style="list-style-type: none"> • Many units run individual shops that experience large fluctuations in workload, producing cycles of feast or famine. Greater coordination and some extent of personnel sharing among the shops would enable a more consistent, balanced workload and generate more reliable revenue streams. • The soft costs for campus-managed construction projects have increased sharply, and are now approaching 40% of the total costs in some cases. | <p>Collaboration/coordination with other campus divisions</p> | <p>Discussions about possible consolidation are underway with the Physics Machine Shop, and will soon commence with the Machine Shop at SSL. Timeline: 1 – 2 years</p> |
| <p>Space Master Plan - this could enable necessary renovations to be more predictable and staged over time, and could help define targets for fundraising.</p> <ul style="list-style-type: none"> • The College could likely benefit from a space audit, a more thorough long-term space plan, and a regular clean-up for old items. | <p>Local, within College</p> | <p>Regular clean-ups will be initiated. A space master plan will be developed. Timeline: 6 months</p> |

II. General Operations and Administration

This team mostly evaluated how to reduce expenditures. Given that the majority of annual expenditures are from personnel costs, the team looked at where staffing adjustments might be made. Through discussions with other units on campus, it was determined that the College’s staff support model was unique and that no other unit paid as much administrative support for its faculty. Other units had also over time eliminated or greatly reduced subsidies to their recharge operations. Therefore, the team proposed reorganizing the College’s support staff and decreasing the amount of staff support provided to faculty in an effort to maintain a sufficient staff-support structure while reducing costs.

Given the sensitivities around any administrative reorganization, the project team interviewed Dean David Ackerly and key staff members to learn more about the experiences of the Rausser College of Natural Resources and the Division of Biological Sciences. Both had undergone an administrative reorganization process, and the interviewees shared what they had learned pre- and post-implementation. Positive

outcomes included gaining greater efficiency, cross-coverage, cross-training, and expenditure control from the re-organizations. Each unit also experienced some negative side effects, which were due to different reasons. It was emphasized that ensuring a transparent and inclusive design and implementation process would be critical to the success of any reorganization. Similar experiences were shared by some DRB members.

| Proposals | Implementation Control | Timeline |
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| <p>Reorganization of Support Staff - increase fungibility of available funding to support staffing needs.</p> <ul style="list-style-type: none"> One relatively small department lacks cross-coverage, cross-training, and back-up. Both departments have a relatively flat administrative structure, lacking promotional growth for staff. There is also duplication of positions across departments. Priority from all stakeholders to maintain the faculty support administrator (FSA) structure. Majority of staff salary funding comes from 19900 funds, which is a fungible source. | Local, within College | <p>We will seek advice from the EVCP on how a critical assessment of the CoC's administrative and staffing structures might best be carried out.</p> <p>Timeline: 1 – 2 years</p> |
| <p>College Subsidies – eliminate subsidies to recharge units and return of research gift fees to junior faculty.</p> <ul style="list-style-type: none"> Are research facilities being used to fullest capacity, and can usage be sold to external sources; i.e., start-up companies? Research gift fees now returned to junior faculty would provide greater benefit across all faculty if pooled. Allocating only salary and not the benefits for 19900 “swaps” via FSREP would reduce administrative effort to process the reconciliation of unused benefits at year-end. | Local, within College | <p>College subsidies to recharge units will be re-examined and adjustments may be made to bring our shops more in line with campus standards. Greater understanding and use of FSREP will be promoted across the College.</p> <p>Timeline: 1 year</p> |
| <p>Investing in Development and Alumni Relations (DAR) - to increase fundraising capacity and procure more discretionary funds to offset decreased campus funding.</p> <ul style="list-style-type: none"> DAR has higher return on investment (ROI) and lower cost than university standards. | Local, within College | <p>A new gifts officer will be hired if funds for initial support of such a position are available and campus grants approval. Timeline: 1 – 2 years</p> |

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| <ul style="list-style-type: none"> Investing in one additional gift officer could ultimately annually generate \$1M+ in new gifts and commitments, although not all budget relieving. | | |
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III. Instruction

A large portion of departmental expenditures goes towards graduate student instructors (GSI) who are essential to lab instruction. Graduate students also benefit from the teaching experience. The Finance Reform methodology does not weigh lab sections differently or calculate the additional work required of them. The College is projected to lose central funds as a result of this methodology despite the consistently high student credit hours (SCH) from Common Good courses taught (Chem 1, Chem 3A/B). Therefore, reducing the number of sections that GSIs teach and reallocating their fixed workload are the main driving factors for the following proposals. The College is ready to implement one of the proposals immediately, which is to reduce teaching requirements for GSIs. In response to this change, the Department of Chemical & Biomolecular Engineering (CBE) has dropped one of the required courses for its undergraduate degree.

| Proposals | Implementation Control | Timeline |
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| Reduce semesters of teaching – lower the requirement from 3 to 2 semesters leaving a third one as optional. <ul style="list-style-type: none"> Graduate students in the chemistry department are usually required to teach 3 semesters. Lowering this requirement to two semesters will allow the College to cut ~33 GSI positions per year (starting from the 233 GSIs in academic year 2020-21), saving on the order of \$700K per year. Redistribute the GSI teaching load – doing so allowed us to cut only 17 sections instead of 33. Chem 1A GSIs teach 2-3 sections. | Local, within College | This proposed change has been implemented to the fullest extent deemed possible. Timeline: 0 – 1 year |
| Using lecturers to replace ~17 GSIs – hire recent (B.S.) graduates as lecturers for lab sections. <ul style="list-style-type: none"> Recent (B.S.) graduates of UCB can be hired as lecturers and assigned to teach labs. | Local, within College | We will implement this proposal cautiously and evaluate its effectiveness. Timeline: 1 – 2 years |

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| <ul style="list-style-type: none"> • One full-time lecturer teaching organic chem lab (Chem 3AL or Chem 3BL) offsets 3 GSIs because each lecturer teaches 4 lab sections. • Depending on how many lecturers are hired, the cost savings is \$100k to \$700k per year. | | |
| Revenue from instruction – provide sustained revenue by creating content for master’s program, summer sessions, enrichment programs, etc. | Local, within College | Efforts to develop such programs are ongoing. Timeline: 2+ years |

IV. Philanthropy and Revenue Generation

Unlike other project teams that focused on cost-saving recommendations, this team evaluated strategies to increase financial resources, namely philanthropic gifts and external revenue. Given the College’s consistently high rankings, there is a presumed demand for the College’s instructional offerings yet it has had difficulty aligning such demand with the faculty’s teaching interests. The Berkeley Catalyst Fund (BCF) is a novel and innovative vehicle for generating external revenue for the College but returns are not immediate or guaranteed, and are longer term.

| Proposals | Implementation Control | Timeline |
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| Develop Revenue Generation Criteria - to evaluate our existing and new potential revenue generating programs to ensure maximum financial benefit to the College. <ul style="list-style-type: none"> • Currently there is no systematic way to evaluate and make decisions on what revenue generating opportunities to pursue. • Berkeley/UCOP’s risk aversion and bureaucracy limit our ability to offer revenue generating programs such as self-supporting degree programs because the process of developing new ones is slow and laborious. • Developing new and growing/supporting existing revenue generating programs requires investing significant resources (both staff and budget) to ensure their success. | Local, within College | Such criteria will be established and used in the evaluation of ideas for new revenue generating programs. Timeline: 3-6 months |

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| <ul style="list-style-type: none"> The faculty culture (research vs. practicum; academia vs. industry) and compensation/incentive structures at Berkeley dissuade faculty from supporting professional/masters degrees, and executive education and certification programs. | | |
| <p>Further Promote Revenue Generating Programs – CR&D’s marketing team (or an external vendor) could be charged with further promoting our current and any future revenue generating programs via more strategically targeted social media and marketing tactics, rather than relying upon the executive directors of these programs to independently do so, thus generating greater revenue through our master’s and professional degree programs by driving greater growth in student enrollments.</p> | <p>Local, within College</p> | <p>Determine the best strategy for promoting our revenue generating programs to ensure enrollment growth and greater revenue generation.</p> |
| <p>Berkeley Catalyst Funds & Philanthropic Funds I & II – The Berkeley Catalyst Philanthropic Fund (BCF) allows for alumni and donors to donate to the Berkeley Catalyst Philanthropic Fund (BCPF) so that our College can benefit from early stage investments in faculty start-ups and other tech based start-ups. Through revenue sharing agreement between the College and the BCF General Partners and direct investments made via the BCPF, our college may realize substantial annual revenues, subject to the highly speculative nature of any early-stage venture capital fund.</p> <ul style="list-style-type: none"> Many College faculty and graduate students are involved in start-ups based upon IP generated from their research at Berkeley; however, the University/College has no equity stake in these companies. The College has several industry research alliances, such as BASF/CARA, Novartis, etc., but does not benefit from the IP generated from these industry research alliances. | <p>Local, within College</p> | <p>The CoC cannot invest in companies directly. CR&D can devote resources to raising funds for the philanthropic components of these funds, allowing the College to be invested in various faculty and other start-ups. Within the University, CoC faculty can be inventors on joint patents, which can lead to revenue for the host department.</p> |
| <p>Fundraising Opportunities – While we have many fundraising priorities that are tied closely to our continued excellence and reputation, such as graduate fellowships, faculty FTE and Chairs, and capital projects (namely Heathcock Hall: \$120M+), CR&D could allocate greater resources and attention to fundraising for direct budget relieving opportunities – such as our annual unrestricted funds and/or core institutional endowment, including seeking potential naming opportunities of our College.</p> | <p>Collaboration/coordination with other campus divisions</p> | <p>CR&D could allocate greater resources to raise more short- and long-term budget relieving philanthropic support via our annual funds and institutional endowment. The dean will work closely with CR&D leadership to determine how best to balance effort and</p> |

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| <ul style="list-style-type: none"> • The College has many funding needs, only some of which are budget relieving in the short-term (annual funds) and long-term (institutional endowment). Others are not budget relieving (capital projects, student scholarships/fellowships, new faculty FTE), whereas others are long-term (endowment & bequests). • Our College's current engagement of prospects able to make \$100K+ level donations is limited, and efforts to grow our prospect pipeline are still at an early stage (ex. Berkeley Ecosystems). | | resources between budget-relieving and strategic priorities. |
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V. Research Facilities and Shops

This project team revisited a number of existing issues, including 1) lack of coordination and collaboration between facilities that share a similar nature, 2) difficulties in projecting accurate staffing costs due to variabilities in annualized work load, 3) and Intellectual Property (IP) restrictions on external users imposed by the campus. Given that the IP restrictions are due to campus interpretations of policy, the team engaged Rich Lyons, Chief Innovation & Entrepreneurship Officer (CIEO) for his assistance. Additionally, joining forces with the California Institute for Quantitative Biosciences at UC Berkeley (QB3-Berkeley) has made the IP discussion more productive and promising.

| Proposals | Implementation Control | Timeline |
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| Philanthropy Outreach - engage alumni and outreach partners to contribute to research facilities and shops. | Local, within College | Opportunistically pursue efforts with select donors who have expressed interest in improving our shops and research facilities. |
| Organizational Structure – Having a well-supported organization instead of the existing patchwork structure for individual core facilities and shops could greatly enhance the appeal for gift-in-kind donations. <ul style="list-style-type: none"> • Our facilities and shops receive less financial & services support compared to those of peer institutions. • Shops in peer units work more synergistically with other departments & colleges. | Local, within College | Discussions about possible consolidation are underway with the Physics Machine Shop, and will soon commence with the Machine Shop at SSL. Timeline: 1 – 2 years |

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| <p>Campus Coordination - Coordination among facilities and shops on campus could provide for better messaging to research groups, industry, and outside users.</p> <ul style="list-style-type: none"> ● Restore the Machine Shop to a necessary critical size by joining with another campus shop facility. ● We are missing opportunities by not having a cohesive research analytical facilities unit; e.g., for outreach, fundraising, efficiency, and grant funding. | <p>Collaboration/coordination with other campus divisions</p> | <p>Discussions about possible consolidation are underway with the Physics Machine Shop, and will soon commence with the Machine Shop at SSL. Timeline: 1 – 2 years</p> |
| <p>Faculty Leadership - assign a faculty director for the instrument shops to advocate for the shops and use of shops.</p> <ul style="list-style-type: none"> ● To lead the outreach and communications with external partners and customers, coordinate proposal preparation and submission to secure federal funding, and supervise operation of existing services. ● A central organization would enhance flexibility and resilience for research staff by cross-training and professional development in order to maintain continuity of research support during times of adversity. | <p>Local, within College</p> | <p>We will assign a faculty director for the shops. Timeline: Immediate</p> |
| <p>Increase External Customers - lower barriers to facilities access for external affiliates to generate additional revenue.</p> <ul style="list-style-type: none"> ● Revenue generation is stifled by campus legal restrictions regarding the ownership of the IP for routine services provided for external customers. ● A new revenue source could be the creation of courses and workshops led by our facilities directors and shops for outside clients. This would generate new sources of revenue for the College by providing extension type courses and enabling maker spaces. | <p>Local, within College</p> | <p>Thanks to our lobbying efforts, changes that relax the IP policy and make our shop services more attractive to external customers have been made at the campus level. Timeline: Immediate</p> |