



WHAT WORKS - STORIES FROM THE COMMUNITY

SCIENCE MATTERS: THE UNIVERSITY OF RICHMOND STORY

Jeanne L. Narum: Thanks to Charles Kirby from EYP (Einhorn Yaffee Prescott, Architecture & Engineering) and Andrew Newcomb (Dean of Arts & Sciences) and Betsy Curtler (Assistant Vice President of Foundation, Corporate & Government Relations) from the University of Richmond for taking time to reflect on the process of planning that resulted in new spaces for science at the University of Richmond.

This is one in a series of interviews with leaders taking responsibility for changing the environment for learning in STEM fields for the undergraduates on their campus; as you know, this responsibility is kaleidoscopic and so how to ensure spaces serve goals for learning is a key consideration.

Let me begin with Charles, the architect, to gain perspectives on working with a client. What questions did the University pose to you that shaped early-on interactions with them as a client?

Charles Kirby: Their primary issue was a move to put greater emphasis on undergraduate research in the sciences, a decision that had interesting spatial implications—including how to accommodate the number of new faculty appointments being made (so that the faculty course load could be reduced so that faculty could integrate their research and teaching of undergraduates more extensively).

Interestingly however, the initial issue they brought to the table was the major spatial ‘problem’ to be addressed; in the process of adding new faculty they felt there was a lack of spaces for teaching.

Andrew Newcomb: Let me expand on that. At least in the 25 years that I’ve been here, the University of Richmond has had a teacher-scholar model for faculty, with expectations for faculty to be actively engaged in research.

Our intent in the emerging science initiative (a broad initiative that included but went beyond attention to facilities) was to elevate and extend the teacher-scholar profile of faculty. This did not mean we were moving attention away from teaching, but rather that we were moving toward a broader view of faculty scholarship. Our attention to a science initiative also resulted from a consideration of our student profile.

An admissions analysis revealed that although we were over-admitting promising students interested in science, our yield rate of those students was low. So we were experiencing a double whammy: these were precisely the kind of students we wanted most, but we were not yielding them at the rate we were yielding for other categories of students. These were the two primary reasons— relating to faculty and to students— that the University of Richmond gave highest priority to the science initiative.

Narum: So this was an institution-wide commitment, not just scientists saying they wanted something new and better?

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Newcomb: Yes. Indeed, our scientists had been asking for something new and better in regard to spaces for several years, but they had never given a convincing rationale, only that they wanted smaller classes.

The real catalyst came when we began discussing institution-wide priorities in regard to the quality of admitted students, as well as the need to remain competitive with our peers in competition for students of the highest potential.

We know students' ideas about majors change during their college years, but those identifying science as a possible career choice in the process of admission are the kinds of students we want, even if they eventually find their intellectual passions elsewhere.

Kirby: Perhaps after organic chemistry?

Newcomb: Well, yes. But also when students take a philosophy class for the first time and really are turned on, we then have on campus a very smart, very multi-talented student majoring in philosophy.

It's a win-win situation. So in the science initiative, we were addressing complex issues. There were many drivers for our efforts toward a science initiative; this is no different than any effort toward major institutional change.

Narum: You've each implied the importance of asking the right questions, thinking outside the box, and taking some risks in the planning. Can you expand on this please?

Newcomb: Let me comment on teaching spaces, which we had initially thought were really inadequate. Through the process of planning, what we found instead was terrible utilization of not very high-quality teaching spaces, while the actual square footage was more than adequate.

For example, we were teaching a bio-chemistry course in a lab space during one semester, but it stood empty and unused during the other semester.

It was a surprise to us all. In our first-stages of planning, we had thought only about how much more teaching space would be needed to accommodate the massive expansion of the faculty that was underway, with little or no attention to research spaces.

Kirby: To emphasize his point: the University did have more than enough square footage for teaching labs, but indeed that did not mean that the labs were adequate.

What we had to do was work with them to 'reinvent' these spaces into the kind of discovery-based learning labs that served their larger vision of a research-rich learning environment.

We took out benches, created student gathering spaces for discussion and group learning. Their teaching spaces did not need to be bigger, but they really needed to be completely reconfigured.

But, I would like to turn to perhaps the most interesting (and certainly the most controversial) aspect of this planning process. The building that we started with was a very odd building.

I can only imagine a University planning committee some thirty plus years ago saying "how wonderful it would be to have a library in the middle of the science building with wings shooting off in four directions so scientists could go back and forth from library to lab." That vision from days past established a library at the heart of the complex of spaces for science.

But through the years, because of security and the way one had to enter into the library, it had become an isolated part of the building.

Given the inflexibility of the centrality of the library, the unworkable traffic patterns and the strange vistas into and out of the library (because of different floor to ceiling heights between library and the wings, the building had turned into a space for very independent, non-connected departments, rather than for a community of science at Richmond.

So the starting point for thinking about transforming the culture, including the spaces for learning, was to wrestle with what to do with the library.

We proposed to University leaders that the library be moved elsewhere on campus and that the vacated space be reshaped to serve as a new kind of entry into the UR community of sciences. After much conversation (which Andy can describe) this was done. The science library was moved to the main library.



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We turned the newly available space into a 'park' that is now the central feature of the renovated building. There is an atrium with a new glass roof that connects with re-shaped wings that now incorporate corridors that serve as more effective paths into and through the disciplinary and interdisciplinary spaces for research and teaching.



Now, when people enter what was the science library, instead of thinking it served four separate buildings for biology, chemistry, physics, and bio-chemistry, the atrium is experienced as an inviting home for a natural science community.

Narum: Homes have many different kinds of rooms, serving different purposes; how they work together is important. Talk about adjacencies and relationship of faculty offices, research labs, teaching labs, and support spaces. Did you mix everybody up or are there still departmental homes?

Newcomb: While maintaining a departmental model, our focus is more on communities. But we have imagined a new kind of mix of faculty, directors, lab managers, and such. The spatial design is to accommodate smaller communities within larger communities.

Let me describe: in an L-shaped chemistry area there are three research labs (600 square feet each) off one leg of the *L*, with six offices at the corner of the *L*, and then with a great gathering space in front. Three more research labs are located on the other leg of the *L*.

We have aimed at significant mixing within each of those groups in making assignments of offices and labs, in order to promote greater interaction among faculty, staff and students. One of the more radical and controversial things (beyond removing the library) was combining the departmental offices for chemistry and biology.

I'm sure my colleagues remember when one colleague said, "Well, that's fine. We'll just build a wall right in the middle and one side will be biology and the other chemistry." My response was, "then we'll put barb-wire on top of the wall." It is a draw whether this decision or that to eliminate the library was the greatest point of contention.

Each faculty member has his or her office, with a 600-square foot lab, but in terms of support space, we arrived at a design solution that made it possible for these spaces to support both the mission of teaching and the mission of research. We do not have distinct support spaces that serve single purposes.

Narum: So what does that mean in practice?

Newcomb: We came up with a common stock room, which was a big step for us. There was a time when we had no genetics faculty, now we have five, and they share a lot of instrumentation in a common support room that is also used in part for teaching. That's a dramatic change.

We have had people who wouldn't know how to share a life jacket, ready to have both people drown than hang on and survive together. But that is really something from the past.

Today I think, from our hires and from the collegiality that emerged in the planning process, there is more collaboration amongst the faculty, formally in terms of grants and informally in terms of discussions about laboratory techniques, technologies, and teaching and learning.... It's just a phenomenally helpful community over there now.

Betsy Curtler: From these formal and informal conversations, we have been much more effective, efficient and successful in the search for external support.



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We have stronger records with the NSF Major Research Instrumentation Program, and have developed and submitted a series of interesting proposals outlining our goals for interdisciplinary work.

In the past it has been difficult to pull these kind of things together— as it always is in working with a group of faculty from multiple disciplines— but it has become significantly easier as new relationships are being built in these new spaces.

We have been able to leverage internal and external support for the sciences much more creatively.

Narum: These seem to reflect hard decisions about issues that affect the future as well as the present of the sciences on your campus. How did you address this?

Newcomb: We had many conversations about the value of different options. Sometimes dealing with such problems regarding space required a decision made ‘top-down’ when there was really little or no choice.

Even though the planning committee completely endorsed the move of the library, when their faculty colleagues began complaining, committee members just blamed the dean and the provost. We took the blame and went ahead— sometimes you have to do that.

In regard to interdisciplinary, we’ve been hiring people with a strong interdisciplinary orientation, taking advantage of a grant from the Howard Hughes Medical Institute that supported additional hires. In my six years as dean, I’ve hired over half of the biology faculty.

That’s a lot of change in a very short period. These hires are changing the climate significantly in regard to cross-disciplinary conversations, and greatly enriched our planning conversations.

Kirby: From an architect’s perspective, faculty always come with different interests, and that is part of the challenge of working with a client—to elicit and respect the diversity, but to work to serve the common good over the long-term.

At the University of Richmond, there were some faculty whose real interest was only their research space, others whose interest was very much their particular department, with a third group with concern about divisional and institutional issues.

Since no one spoke for everyone, in some way that opened the door for us to do what we thought was best for everybody.

Narum: Was it all renovation or new too?

Kirby: It was a combination. In some parts the renovation was 100% and in others the renovation was gentler. This planning engaged interesting discussions about interdisciplinarity, about considering how to ‘site’ offices and labs and about the ownership of spaces.

It was clear, in thinking about needs for teaching and research spaces that would serve the future, that it was important to move away from the ‘kingdom’ model of space use in which a single faculty member ‘owned’ a single teaching lab, given the rationale that they ‘needed’ the space as an extra research lab. Maybe they did or did not.



By putting on the table a plan to share teaching labs aggressively, we illustrated how freeing space in the ‘program’ request (examining what space was used for what purpose at what time by whom) made it possible to put research labs into some previous teaching labs.

Thus the University could build a smaller addition than had been imagined, one that was 100% faculty offices and research labs, rather than a mix of offices, research and teaching spaces. In the process of figuring all this out, the faculty got excited when they saw that everything they really wanted was possible to achieve within budget.

I think the ability to sell this concept helped to bring people along even when they did not agree on other of the individual planning decisions.



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Newcomb: We were lucky in the budget arena. Early-on, we knew we had a compressed time-line and a tight budget. We caught a good wave in construction costs, and the architectural plan, with a race-track design, was also very cost-efficient—with windows on all the perimeters.

Since the 'core' was already existing, the architects arrived at a very clever way of basically 'strapping on' the labs and offices on the back of the existing building. Almost all the addition of 30,000 square feet was net.

Narum: How will UR students experience these new spaces and how they feel about science?

Newcomb: The building is geographically in the center of the campus, directly across from a brand new dining hall, part of a well-traveled traffic pattern for our campus.

Students are beginning to use the building as a gathering point and faculty are now there five days a week, for late hours and on weekends because they feel it is a very pleasant place to be, as do the students.

Kirby: To its credit, the University was intent on making this space very inviting to come into and to be in. The original building was badly configured and really dreary.

With the redesigned entrance, a sky-light in the atrium and a very compelling bridge, the architecture gives people a visual sense of the intellectual connections within science.

It is clear evidence of the commitment of the University to ensure that the quality of the space matched the quality of its programs.

The University of Richmond has a strong sense of the architectural integrity of its campus— it is solid, traditional, and gothic. The building we began with did not contribute to the aesthetics of the space, and one charge we received was to bring the feel of the best of the campus into the renovated and new spaces.

Narum: Is there a metaphor for your building?

Curtler: I would say that these new spaces have become a new engine for our campus, something that has motion, something that is alive in a way that is visibly on the move in a very appealing way.

Newcomb: Let me come at the metaphor of energy in another way. When I think about the design, I think about it being a wheel with spokes.

How the new spaces ended up was that we were breaking down barriers between disciplines and providing diverse and multiple opportunities to connect and reconnect.

We all knew that we were creating spaces that would be able to address future challenges, future opportunities to connect and reconnect.

Kirby: The existing building was built with a 1970's attitude toward science or maybe a 1950's attitude, to be honest; upon entering the building, faculty went into their own cell, their own very private world.

Everybody agreed in the planning that we wanted to completely invert that. We opened up space, including adding windows into the labs, so people could see what was going on.

This goes a long way to helping people feel the energy of their colleagues at work, creating an atmosphere of sharing that just was not there before.

Narum: When you walk into the building, what does your heart say to you?

Kirby: I think connections and commitment. You walk in and you understand that you're invited and science is important to the University of Richmond, and you see much activity by many disciplines.

Curtler: For someone who has been on campus for many years, I cannot get over how different it is. You walk in and there is this sense of surprise, there is this sense that 'I like being in this place.'

Newcomb: I'll sum it up very briefly. You walk in and say "science matters." ■