A harmonious marriage of old and new, the solution pays tribute to the university’s proud scientific foundation while ushering in the future of research and education.
What happens when there is no more room to build? When land parcels are at a premium and a compact urban environment restricts any ability to extend site borders? How can a program’s offerings push the boundaries of science within this very rigid set of parameters?

At the University of Wisconsin, the Biochemistry Department struggled with this exact dilemma — given a site occupied with a diverse mix of aging buildings and no ‘extra’ space, deciding the best course forward was a delicate undertaking.

For this world-renowned department, whose many and varied contributions to biochemical science rank among the field’s most notable discoveries, the new Biochemical Sciences Complex completes a transformation of both architecture and program.

With a new, modern research tower and two artistically renovated structures, these state-of-the-art facilities provide the necessary space for a long-awaited relocation and collaboration with the Medical School’s Biomolecular Chemistry Department.

Celebrating a deep-seated culture of community and the fundamental similarities of biochemical processes, the collocation of these two departments will encourage new interactions and advance the possibilities for collaborative research and teaching efforts — including those that are apparent and others yet to be discovered.
“The Biochemical Sciences project has added great value to a very important campus neighborhood where the campus and city grids meet. By transforming a dense, unattractive back-of-house space into a vibrant campus community, it has enhanced the sense of place and continues to enrich the experiences of campus community members. The stewardship-minded design team conceived a plan that would not tear down historic heritage buildings located at the site, but would instead weave the new Biochemical Sciences building into this complex of historic buildings that were restored and renovated as part of the overall project. This move helped to preserve the existing campus fabric.”

Dan Okoli, NCARB, AIA  University Architect  University of Wisconsin - Madison
**CHALLENGE 1**

169,200
Fit 169,200 square feet of new research space onto a 180’ x 110’ footprint

**CHALLENGE 2**

150 yrs
Preserve 150-year-old American Elm

**CHALLENGE 3**

Revive historically significant buildings on site

**CHALLENGE 4**

1908
Reestablish pedestrian path from original 1908 master plan

University of Wisconsin - Madison
Biochemical Sciences Complex
Since its founding in 1883, the Biochemistry Department has expanded in both size and influence, gradually adding infrastructure to support a continued excellence in research. However, the site had become a collection of structures widely varied in age, quality, and architectural design that could no longer function cohesively.

After considering both the necessity to keep pace with quickly evolving laboratory technology and a desire to honor the department’s strong legacy, a plan emerged. The oldest, history-rich structures on the site would be restored and renovated while the outdated 1956 laboratory building was removed, leaving space for a new, state-of-the-art research tower.
The mindful approach to preserve 150 years of growth embodies the devotion to recognize past discoveries that inform today’s research.

Decades of discoveries:

1912 - 1915
Discovery of Vitamin A and the Vitamin B complex

1924
Discovery of the irradiation process for production of Vitamin D and elimination of rickets

1937
Isolation of niacin and elimination of pellagra

1947
Development of fermentation methods that led to the large-scale preparation of penicillin and other antibiotics

1972
First chemical synthesis of a gene

Preserve 150-year-old American Elm

This beloved tree stands majestically on the site as a living connection to the university’s past. Great care was taken to ensure its health during construction.
Through nearly 130 years of discoveries, the Department of Biochemistry has played a significant role in the development and progression for understanding the chemical basis of life, revealing significant improvements for the human condition through a molecular understanding of basic biological problems.

The 1912 Biochemistry Building, the department’s first building, was expanded in 1937 with an addition that completed the structure’s original design vision. The 1937 portion is adorned with several floor-to-ceiling murals depicting the benefits of agriculture and science. Created by John Steuart Curry, a famous American regionalist painter, the delicate artworks were carefully preserved during construction and meticulously cleaned.
Reestablish pedestrian path from original 1908 master plan.

The reclaimed thoroughfare stitches the space back into the fabric of the larger campus.
“When I interviewed for my position in the Biomolecular Chemistry department, the new Biochemical Sciences Building was helpful in showcasing the many strengths of the University of Wisconsin - Madison. It was wonderful to see the lunchrooms that facilitate interactions among researchers, the large windows that make working long hours in the lab more pleasant, the showers allowing people to commute by bike, and the flexible space allowing labs to grow and shrink as needed. During my visit I could hardly predict another wonderful feature of the building: it brings two departments together. I was lucky enough to start as an assistant professor at the same time as Jill Wildonger and Aaron Hoskins in Biochemistry. The fact that they are in the same building has allowed for great interactions. Starting out as an assistant professor is tough, but this building has helped foster the collegial interactions necessary to succeed not only within my own department but also between departments.”

Melissa Harrison, PhD  Assistant Professor  Department of Biomolecular Chemistry
Organize teaching and research spaces among four separate buildings.

Create a visual connection with the traditional buildings on site.

Unify the four buildings on site.

Design

University of Wisconsin - Madison

Biochemical Sciences Complex

CHALLENGE 1

4 buildings

Organize teaching and research spaces among four separate buildings.

CHALLENGE 2

6 stories

Height limitation

CHALLENGE 3

Materials

Create a visual connection with the traditional buildings on site.

CHALLENGES 4 & 5

connect

Develop spaces that foster collaboration.

Unify the four buildings on site.
The Biochemical Sciences Complex presented a complicated host of issues to solve. The resulting design solution addresses the difficulties of balancing a physically constrained site, characterized by strong historic context with the program needs and project budget. Sensitivity to — and preservation of — the remaining buildings, as well as controlling the overall mass of the new research tower, emerged as key architectural challenges.

A great deal of thought, investigation, and planning informed evaluations about reuse of the buildings, and a concise organization of the program emerged. With a limited amount of space to work with, prudent decisions about the location of different elements in the various buildings informed the design and established connections between them.
The decision to house teaching functions in the 1912/1937 building and locate research activities in the new tower informed the design. The simplicity of placing larger spaces associated with teaching independent from research functions allowed a more flexible laboratory floor plate in the tower. The 1906 building abuts the tower and contains a variety of support functions for the entire complex.
The Working Design Group expressed concern over the new tower’s height in relation to the surrounding diminutive historic structures. Accommodation of necessary program elements within the severely restricted footprint required additional floors in the design. Contextual sensitivity had to be taken into consideration.

To avoid overpowering the older three-story buildings, a few major design decisions limited the tower to six stories, placing it in near alignment with the height of the 1985 structure.

1 Under-utilized lab space on floors four, five, and six of the 1985 building were remodeled with updated wet labs.

Below grade:

2 A demolished vivarium was replaced with below-grade vivarium facilities in the new tower.

3 Mechanical infrastructure that ordinarily resides in a penthouse space was instead placed below grade.
Although modern in style, the tower incorporates many aesthetic qualities derived from the adjacent structures. The materials chosen relate to, but do not directly mimic, the historic buildings’ design.

In particular, the terra cotta rain screen façade and sunshading elements are a gesture to the turn-of-the-century clay tile roofs.

To mitigate the tower’s shift in scale, it is designed to be buoyant. An abundance of glass and anodized aluminum contributes to this lightened effect. The rhythm and proportions of the fenestration echo modules established by existing buildings. The play of light and shadow further animate the tower’s façades.
The modern reinterpretation of historic materials on the exterior continued within the tower’s public spaces, invoking a sense of comfort and familiarity.

Placement of the new research tower provides a convenient path of travel between all four buildings. This interior connection links all of the complex’s functions – research, instruction, and support – allowing them to perform as a unified group rather than separate silos.

Unify the four separate buildings on site
The open flow of movement through the facilities invites a free exchange of ideas as researchers, students, staff, and visitors easily travel throughout the departments. Additionally, lounges and kitchens on each floor encourage socialization and collaboration, providing a break from highly focused research activities.

The lounge areas support a longstanding tradition in the Biochemistry Department – each week a different research group hosts a potluck, further cultivating camaraderie.

**Challenge 5**

**Connect**

Develop spaces that foster collaboration

**Design Resolution 5**
“The reality of the intensity of experimental science is recognized in the breakrooms on every floor. These amazing spaces give workers a place where they can heat food and sit down with colleagues. Having sinks, dishwashers, refrigerators, and microwaves in a separate space accommodates the diverse needs of the building occupants. Sharing meals is the best way to foster communication and having a space in which to do this makes for better science. We share the news of the day, and there are research journals all over the place. Without such a space, we wouldn’t have the opportunities for scientific exchanges that we do now.”

Christina M. Hull, PhD  Associate Professor  Departments of Biomolecular Chemistry and Medical Microbiology & Immunology
Biochemistry and Biomolecular Chemistry departments share a graduate program.

CHALLENGE 1: Consolidate

Biochemistry and Biomolecular Chemistry departments share a graduate program.

CHALLENGE 2: Science Complex

Combine four distinct science spaces into one cohesive complex.

CHALLENGE 3: Preserve

Efficient use of resources.

CHALLENGE 4: 2447

Accommodate 2447 researchers, graduate and undergraduate students.

CHALLENGE 5: Safety

For all who inhabit the complex.
An opportunity for consolidation.

The University of Wisconsin has historically been a leader in biochemical research with discoveries benefiting the state, the nation, and even the world. Thus, in 2006, the Departments of Biochemistry and Biomolecular Chemistry crafted a plan for a joint graduate program, capitalizing on the strong history of graduate training in both departments. This program represents the best features of each department, highlighting an exciting and unprecedented step for cooperation and collaboration in the biochemical sciences at the university.

The Biochemical Sciences Complex embodies the ideals of this alliance. Spaces for almost all functions are shared among the departments. Restorations across the site have preserved its historic significance while creating stronger research associations with neighboring biological science facilities. Reestablished connections to major campus pedestrian thoroughfares invite the larger campus community into the facilities.
Since the formation of these departments decades ago as separate entities – one for the study of plant and animal biochemistry, the other for human biochemistry – their fundamental similarities have converged to blur the boundaries between their research. The proximity they now enjoy has fostered new possibilities for long-term collaborative research and teaching efforts.

Their consolidation maximizes limited capital resources by addressing multiple programmatic needs within a single site.
Creating a program that unites students and faculty from two departments was one of the university’s central goals. Determining the best use of the four distinct, yet interconnected, facilities on the site presented significant challenges that were ultimately resolved through revitalization of the existing buildings. Assignment of the research functions to the new tower freed the historical spaces to house the instructional, administrative, and support spaces. The resulting complex of buildings not only succeeds in the advancement of both departments’ research and pedagogical goals, it integrates a rich layering of history.
A thoughtful repurpose of the site's historic buildings resulted in the preservation of existing materials in several forms; from reuse of the 1906, 1912, and 1937 structures to incorporation of demolished brick in a number of new façades. Whenever possible, interior detailing, fixtures, and finishes were restored to the original design and incorporated sustainable options.
The State of Wisconsin is progressive in its outlook on sustainable design with a defined set of standards for all building projects, many in direct reference to the U.S. Green Building Council’s LEED program.

According to energy models for the research tower, the building is projected to achieve a 21.8 percent greater efficiency than a similar building designed to meet minimum code requirements. One contributing factor is a daylighting strategy that combines use of daylighting and occupancy sensors, exterior sunshading, and spectrally selective glazing, achieving energy savings while creating a quality work space. In addition, several mechanical systems control the amount of energy used:

- High performance lab hoods including variable air volume (VAV) fume hoods. When a high level of ventilation is not necessary, the volume of air can be reduced.
- Lab controls for more precise control of mechanical systems. When labs are unoccupied, air change rates are reduced to minimum levels.
- A glycol runaround heat recovery system on laboratory exhaust returns heat to air handling units that would otherwise be wasted.

To ensure all mechanical, electrical, plumbing, and controls systems would operate as designed, a commissioning agent was employed during the construction phase.

Additional initiatives to conserve energy and resources include:

Three small data centers utilizing highly efficient process chilled water in-row cooling units to maintain temperatures at the server racks, accommodating high-density server room clusters of up to 24kW per rack.

Low maintenance and durable materials such as anodized aluminum and glass were selected for the tower’s façade. Terra cotta cladding was chosen for these reasons in addition to its light weight and contextually appropriate appearance above the line of the adjacent traditional buildings’ roof datum.

Matching brick and stone was salvaged to facilitate reconstruction of the 1937 addition’s north façade where the 1956 building was removed.

The gabion wall built on the north side of the 1912/1937 structure was constructed from nine-inch stainless steel mesh baskets filled with recovered brick from the razed 1956 building.

Creative reuse of existing site materials and an aggressive construction waste recycling program contributed to a construction waste diversion rate of 97 percent by weight and 90 percent by volume.
CHALLENGE 4

Accommodate 2447 researchers, graduate, and undergraduate students

2447

In addition to the researchers and students who call this complex home, the site welcomes a large influx of visitors on a daily basis. The two large lecture halls are heavily requested by professors across the campus.

All areas of the complex are connected to the second floor of the tower, creating convenient travel paths for all occupants.

Program Elements

- Laboratories for 29 research groups with an average of 12 researchers per group
- A vivarium housing small rodents and aquatics
- Two large, modern teaching auditoriums with seating capacities of 352 and 164
- Several classrooms and discussion rooms varying in size from 16-64 seats
- A digital media computer lab accommodating 60 people
- Two biochemistry instructional laboratories with capacities of 24 and 40 students
- Administrative space for the Biochemistry and Biomolecular Chemistry Departments
- Offices and database for the National Magnetic Resonance Facility
- A variety of specialized equipment and support facilities
Safety

for all who inhabit
the complex

Safety features are included throughout the facility in both the research and instructional laboratories.

Write-up spaces within the chemical synthesis labs are placed behind sliding glass doors, providing a protective barrier between the researchers and chemical hazards while maintaining sightlines and proximity to bench activities.

Professors’ offices are in close proximity to graduate researchers along the lab corridor, allowing them to easily oversee laboratory activities.

The hazardous materials control zones were maximized for allowable storage on each floor. Researchers keep frequently accessed bulk materials in the designated room, allowing for just-in-time delivery to the lab.

Eye wash and shower stations are located at every lab entrance.

The facility’s design protects its smallest inhabitants in the vivarium from all outside disruptions through a tightly controlled, humane environment.
“In terms of function, it’s hard to know where to start because everything about the space is designed for optimal function with maximum safety. The layout favors collaboration to plan and perform experiments, as well as analyze and write about the data. In particular, the arrangement of the equipment bays separate from (across the aisle), but in close proximity to, the spacious lab benches is very convenient. Having my office (with its large window) next to, but separate from, the labs is another very much appreciated design feature.”

M Thomas Record, Jr., PhD     Professor     Departments of Chemistry and Biochemistry
Central problems in developmental biology, protein structure and function, molecular genetics, nutrition, metabolism, enzymology, and more, dominate the research environment in the labs – where interdisciplinary research is not only possible, but expected.

The departments relish the challenges ahead – combining modern methodologies and pioneering approaches with established traditions in an ambitious effort to understand the molecular basis of life.

Pluripotent cells, such as embryonic stem cells, can differentiate into a vast array of cell types, and it is this remarkable capacity that has generated excitement about their therapeutic potential. While many researchers study these cells in culture, little is understood about what regulates embryonic stem cells in the context of a developing organism. Dr. Melissa Harrison, assistant professor in biomolecular chemistry, is using the fruit fly to explore the biological process that generates these stem cell populations in the early embryo. By using the fruit fly, her lab is able to use a vast array of tools for these studies including biochemistry, genetics, molecular biology, genomics, and cell biology.

Despite their recognized importance, fungi are a woefully understudied branch on the tree of life, directly resulting in our lack of understanding of human fungal pathogens. Fungi represent the fourth most common cause of hospital-acquired infection, and therapeutic options for treating severe disease are limited. In addition, their mechanisms for reproduction and interaction with the environment (including human hosts) are largely unknown. In response to this deficiency, Dr. Christina Hull, associate professor of biomolecular chemistry and medical microbiology and immunology, has focused her lab’s research on studies of the fungal pathogen Cryptococcus neoformans. Their work involves diverse approaches to increase our understanding of the molecular mechanisms controlling fungal development, explain the basic properties of spores that make them infectious, and characterize key interactions between fungal spores and the mammalian immune response.
Historically, studies of DNA replication, recombination, and repair have been divided into separate research fields, while the connections between these areas have been largely overlooked. However, it is now apparent that these genomic maintenance processes overlap extensively, sharing common enzyme factors and pathways.

Dr. James Keck, a professor of biomolecular chemistry, seeks to characterize the mechanisms that coordinate and regulate these processes. His lab’s experimental approach combines enzymology, biochemistry, and X-ray crystallography to study the structure and function of proteins that are involved in multiple nucleic acid metabolic pathways.

Transcription, the copying of DNA sequence information into RNA by the protein RNA polymerase, is the key first step of gene expression. Dr. Tom Record, professor of biochemistry and chemistry, uses fast kinetic methods to discover how RNA polymerase functions as a molecular machine with many moving parts to open the DNA double helix at the correct place and select the correct strand to copy. They are determining how rates of these most important steps in bacterial transcription initiation are regulated by promoter sequence and accessory proteins. This information will help in the design of antibiotics to interfere specifically with bacterial transcription without interfering with transcriptional machinery.

As core components of the brain, spinal cord, and the rest of the nervous system, neurons perform the extraordinary job of transmitting information to every part of our bodies. Dr. Jill Wildonger, assistant professor of biochemistry, is exploring a variety of mechanisms that occur within these nerve cells at a molecular level to gain a better understanding of their overall function. Research performed in her lab combines genetic, molecular, live-cell imaging, and biochemical approaches, using the developing fruit fly as a model. A central goal of Dr. Wildonger’s research is to identify the molecular and cellular cause of human neurodevelopmental and neurodegenerative disorders, such as Alzheimer’s Disease and Parkinson’s Disease, that are linked to defects within neurons.
“The open design of our main lab area has facilitated and encouraged interactions with our neighbors in the Hoskins lab. Although research in Hoskins lab is focused on a topic quite distinct from what we do, the open floor plan has fostered a continuity between the labs that has led to our lab members interacting on a daily basis, sparking new ideas and collaborations (we are now planning to collaborate with the Hoskins lab on some single molecule experiments, and the Hoskins lab is considering using fruit flies for some experiments). The labs on the floor feel connected, and as a young PI, it has really helped us to feel part of the scientific neighborhood on campus.”

Jill C. Wildonger, PhD  Assistant Professor  Department of Biochemistry
CHALLENGE 1
Create a science community

CHALLENGE 2
Design 29 laboratory spaces

CHALLENGE 3
facultty offices
Create both public and private space

CHALLENGE 4
support
Enhance productivity

CHALLENGE 5
teach
Environments for Learning

University of Wisconsin - Madison
Biochemical Sciences Complex

Science 4

Create a science community
Enhance productivity
Create both public and private space
Environments for Learning

An environment of intense research and teaching.

Modern biochemical research depends heavily on instrumentation and state-of-the-art laboratory and support facilities — the outcomes of this research could not be more important. Just as the early biochemists searched for answers to halt widespread diseases, institute higher nutritional standards, and solve agricultural problems of the time, the answers generated by today’s research are advancing the fields of medicine and healthcare, genetics, physical and materials sciences, and biofuels. The need to find molecular answers to fundamental problems in the biology and chemistry of life is the common driving force for this field of study.

The infrastructure on this complex seeks to inspire and support these critical endeavors. Each floor’s design revolves around the core desire to bring people together for the benefit of a deeper, more developed understanding of complicated scientific issues. Laboratories, offices, classrooms, and other spaces play a critical role to ensure chance meetings happen.
Create a science community

The idea of community plays a central role in the traditions and culture of the Biochemistry Department. In recognition of the value placed on collaborative interaction, the complex is designed with amenities that contribute to an inviting and unifying atmosphere.

The tower’s light-filled lobby serves as an engaging setting for study between classes or conversing with colleagues.

A café, coffee shop, and patio provide a convenient meeting spot both indoors and out.

A lounge and reading room set aside for faculty offer a quiet location removed from laboratory and classroom activities.
The ability for graduate students to be in close proximity to their research is an important aspect of the Biochemistry Department’s culture. To accommodate this, a write-up area is located directly adjacent to each traditional wet bench. The same idea is repeated in the hazardous organic synthesis labs. To protect researchers in this environment, the bench and write-up areas are separated by sliding glass doors.

Daylighting strategies diffuse light and control heat gain and glare in the labs, contributing to a comfortable, well-lit workspace.

To reduce safety risks inside the lab, higher hazards, such as chemical preparation, and space for extra equipment are located in smaller rooms and alcoves away from the bench area.
Specialty labs and shared spaces

A number of specialty lab spaces are located throughout the complex that range from wet bench to hood to computational science research.

A plant growth suite, including three growth chambers, is used for both instruction and research.

A vivarium houses small rodents and includes several rooms designed to accommodate aquatics. The holding rooms feature ventilated cage racks and an automated animal watering system, procedure rooms support the research, and specialty areas for vitamin and metabolism research include prep kitchens to support these nutritional studies.

X-ray crystallography suites — crystals are grown in dedicated cold labs and scanned. The acquired data (maintained in one of three new data centers on the complex) reveals the physical structure of the protein in question. This molecule can be displayed in a number of ways — a three-dimensional molecular visualization room allows investigators to view the model in virtual reality or the data can be used to create physical models generated on a three-dimensional printer.

The Biological Magnetic Resonance Bank (BMRB) collects, analyzes, and archives data derived from the nine NMR spectrometers in the National Magnetic Resonance Facility located in the neighboring 1998 Biochemistry Building.

A variety of microscope facilities are provided including state-of-the-art confocal laser scanning microscopes.

Seven chemical fume hood intensive, organic synthesis labs focus on the design and creation of synthetic organic molecules.

Laser laboratories support research including single molecule fluorescence studies.

Small ISO 7 / Class 10,000 clean room.

Each lab floor contains a core of shared laboratories and other functions common to all researchers on that level.

- Tissue culture labs
- Radioisotope room
- Media preparation
- Walk-in cold labs
- Hazardous materials storage
- Equipment corridor for centrifuges, freezers, and other shared equipment
- Autoclave on each lab floor in addition to one large central glass wash facility
Faculty offices designed on a suite concept. A ‘front porch’ administrative space is shared by two or three offices, welcoming visitors with a comfortable seating area. Professors have the option to meet with one or two people inside their private office, or in groups of four or five in the porch space. For larger group meetings, conference rooms are easily accessible on each floor.

The suite’s administrative staff ensure professors can work undisturbed when necessary.
A media lab supports the whole site for both instruction and research purposes with rapid prototyping printers, a sound booth, sound mixing, video editing, and poster printing – a single stop for a variety of tools and assistance.

The research tower has several overnight rooms for occasions when experiments require continual monitoring, providing researchers an opportunity to sleep or shower without leaving their work unattended for long periods.

Support areas adjacent to the instructional labs are designed to allow efficient coordination of experiments within the allotted class time.
Almost all of the teaching spaces on the complex were placed in the 1912/1937 building including two large lecture halls, smaller discussion rooms, and two instructional laboratories. These labs are specifically planned to accommodate classes with up to 40 students and are flexible to facilitate both small group work and large group discussions. A large adjacent classroom provides a separate environment for learning the theory of experiments to be performed.

Interestingly, these labs are located in the same space where many early notable scientists of the Biochemistry Department had their labs.

It is fitting that the place where pivotal first discoveries occurred is now used for instruction, linking the past to the future well into the next century.
In response to a perpetual shortage of instructional space for the departments, space was allocated for state-of-the-art lecture halls and instructional labs.

The largest lecture hall seats over 350 people utilizing a balcony that brings the audience close to the speaker.

Teach
“The ability to do cutting-edge science requires a facility that delivers a technically advanced environment, while at the same time providing a space that inspires. This building does just that! For my group, one of the most important aspects has been a defined space for our X-ray crystallographic experiments, including a dedicated room with precise temperature control and ample space for multiple computer workstations where students comfortably build molecular models for hours on end. Our integration with other labs in the building is also terrific and will inspire new connections and collaborations going forward.”

James L. Keck, PhD    Professor    Department of Biomolecular Chemistry
It is hard to imagine a more challenging design problem than the one presented by the Biochemical Sciences Complex at the University of Wisconsin. Flad Architects was faced with a highly constrained building site, state and university requirements for historical preservation, and the need to tie new construction into multiple existing structures built in several different eras (one of them partially occupied throughout the construction period). Nevertheless, researchers and instructors alike view the project as an unqualified success. The theme of the complex is livability, with countless features (large and small) that address and enhance all aspects of a research and teaching enterprise.

After moving in at the beginning of 2012, researchers occupying the new research tower found well-designed laboratory and meeting spaces to facilitate interaction. The new research spaces are sunny and a joy to work in. The research tower is now just one part of a building that integrates two other structures, one built in 1906 and the other in 1985. The 1906 building was gutted and renovated to provide computational space, some specialized meeting rooms, offices, and a coffee house! The 1985 structure provides additional contiguous laboratory space.

Two older wings, originally built in 1912 and 1937, were completely renovated and re-purposed to teaching. Separation of the teaching and research functions enhances security, while still affording convenient connection via a secureable sky bridge. Historically significant wall murals in the 1937 wing represented one of the major challenges faced by the architects; these were carefully protected during construction, then cleaned and restored to their original luster. Open student lounges provide delightful waiting areas that eliminate congestion outside the large new classrooms.

What is not to like? The labs put everything in reach, provide lots of auxiliary space for every kind of specialized equipment, and make the researchers smile when they come in each day. The light-filled lunchrooms, cozy coffeehouse, beautifully landscaped outdoor plaza, bright and spacious lobby, and meeting rooms with an unusual range of pleasant interior designs provide lots of inviting venues for discussing research. Perhaps the true measure of success comes when one assesses whether spaces are used. Students have quickly found the many comfortable places to study and congregate, and congregate they do – reliably – whenever the buildings are open. Many of the spaces are simply irresistible by design. Flad did not attack this project as a series of problems to be solved. Instead, they took it as a series of opportunities, and creativity was applied to every one of them.

Michael M. Cox, PhD, Professor, Department of Biochemistry

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