



Glen Berry, AIA

"I have been an end user/owner executive over several large projects our school has done with Glen's expert help. Glen takes our conversations about needs and design items from conversation to rough drawing to complete design in a very rapid manner. Having worked on building another project in my previous position with another designer. I was impressed with Glen's use of technology, knowledge of good design and his efficiency. He helped us take our flipped classroom team training concepts from classrooms to the laboratory. Our prospective and current students have been impressed with our facilities and these designs have helped recruit students."

Ronald P. Jordan, R.Ph., FAPhA, Dean
Chapman University School of Pharmacy, Irvine, California

Cover Photo: Pharmacy Teaching Lab, Chapman University

CONTENTS

Sponsor Letter	1
Section 1- Summary of Achievements	
Summary of Achievements	2
Section 2.1- Significant Work	
Experience	3
World Map of Projects	4
Protean Lab Metrics	5– 9
Selected Projects	10-13
Section 2.2- Significant Awards	
Awards	14-17
Section 2.3- Significant Publications	
Publications	18
Section 3- Exhibits	
Exhibits Index	19
Exhibits 1-10	20-39
Appendix	
References	40

SPONSOR LETTER

2021 October 04

Mr. Steven Spurlock, FAIA
Chair, Jury of Fellows
American Institute of Architects
1735 New York Avenue NW
Washington, DC 20006

RE: Glen Berry, AIA

Dear Mr. Spurlock:

I am pleased to sponsor Glen Berry, AIA for 2nd year fellowship application under Object Two Practice (Technical Advancement) in Specialty of Technical Expertise in Laboratory Planning. Glen has been the consulting Lab Planner for all my firm's laboratory projects for over 20 years. He has continually advanced lab design resulting in significant advancement of learning and research. He has shared this work in collaboration with architects and through writing and presentation throughout the country.

Glen has developed laboratory design that is an innovative space with work areas, student work stations, flexible instruction methods, support, and services that allow ease of collaboration, alternative teaching, and group work. This has become a new standard for lab design approach that architects are implementing throughout the country. Interactive work is facilitated in his designs through the design of station geometry, workstation varied forms that can be group or individual use, views and connections to support and related work spaces. He has developed a method for illustrating lab concepts and requirements in sketches and studies that is highly interactive and effective for design team, owner, and user evaluation of optimum lab approaches. He collaborates with the entire engineering team to develop comprehensive system adaptability and optimization. This has resulted in unprecedented long-term use for labs, creating spaces that do not need major modification to accommodate ever changing research and teaching functions - sustainable design. Teaching can be at any point in the space, equipment can be changed and moved made possible from his design. His innovation in lab design is comprehensive and has significantly advanced the standards of practice for laboratory buildings for education and research.

Through his work and practice, Glen has significantly effected the profession's approach to lab design working with architectural firms and projects for diverse clients and uses. He has demonstrated continuing effect that his innovative laboratory design results in highly improved teaching and research that exemplifies professional contribution and improvement of the profession. I highly recommend Glen Berry for elevation to Fellowship.

Sincerely,



Marlene S. Imirzian, FAIA President
2013 Chair AIA Committee on Design, 2012 Chair AIA Trust

Marlene Imirzian & Associates LLC, Architects
8906 North Central Avenue
Phoenix, Arizona 85020
602 943 5279 v 602 943 5673 f

Marlene Imirzian & Associates Architects, Ltd.
240 North Market Place
Escondido, California 92029
760 480 5548 v 760 480 9601 f

SECTION 1- SUMMARY OF ACHIEVEMENTS

Glen Berry has led innovation and improvement in educational and research laboratory design that provides adaptable, flexible, and versatile labs. This innovation allows for unprecedented excellence in science learning and discovery.

Lab Programming: Predesign sets the stage for Innovation

Glen has been a leader in developing innovation of lab design, starting with an early paper he wrote regarding the laboratory environment as an experimental shell in which creativity is fostered through human interaction and flexibility. He has consistently developed this approach to labs as a key architectural programming element in the advancement of scientific discovery (research) and critical training (education).

He describes his approach as PROTEAN, an adjective which comes from the Greek mythology god Proteus (god of oceans & rivers) and which connotes adaptable, flexible, and versatile. His lab designs have advanced with each project. His Paradise Valley Community College Life Science Building introduced a major innovation in the program concept and design of lab spaces that provided for unprecedented ease of collaboration with connected zones of adaptable workspaces, resulting in space use flexibility.

He intentionally programs all lab functions to allow for spaces that can adapt and change as the unforeseen science of the future changes. He is a close collaborator on developing these new spatial approaches with architects around the country, resulting in highly increased ability of the spaces to change in use and equipment, changing the standards for lab design nationally.

Lab Planning: How people work and interact = Interactive Lab Design

Better interaction = better collaboration = better scientific learning & discovery. Scientific discovery improves when people communicate, interact, and collaborate. Glen's lab designs enhance the communication and interaction of people. Labs designed with human interaction in mind have appropriate technology infrastructure, and a productive working environment with spaces for students and faculty to interact informally.

Glen's development of Interactive lab design considers natural daylight, views to the exterior (views to the mountains from inside a geology lab), lab/office adjacencies (adjacent, across the hall, down the hall, remote), and lab/classroom adjacencies (lecture in the lab, near the lab, remote to the lab). His interactive lab design takes into account how not only science faculty and research personnel interact, but how students interact and socialize with each other while on campus and while in a building.

Glen's lab designs take into account the wholistic lab context. He not only looks at the specifics of the interior lab furniture and equipment design, but also at how people work, communicate, and interact with each other, which is reflected in the lab design stations and services. The human aspects of design play as much a role in the design process as the technical aspects of science building design.

Lab Design: Flexible Design = Sustainable Design

Today's earth science lab is tomorrow's biology lab. Tomorrow's environmental science lab is today's chemistry lab. Glen's approach has allowed for labs that do not need major construction change to adapt for the ever-changing uses.

The wholistic approach to building systems, adjacencies and integration of sustainable and renewable materials developed for labs by Glen has a key result in long term building sustainability. Working closely with the design team including system engineers, his labs provide adaptability in lab function and systems infrastructure provide long term sustainable use.

Key is his collaboration with the full design team to integrate mechanical, plumbing, electrical, and other systems in designs that allow for ease of access to primary systems distribution without requiring closure of entire floors or buildings.

Adaptable, flexible, and versatile lab design contributes to long term sustainability of science buildings. Flexible building systems have spare capacity for adding future, unforeseen equipment, such as chemical fume hoods, biological safety cabinets, and lab sink stations.

Labs are among the costliest of building space types. Integrating long term flexibility into the design of science buildings is essential to long term sustainability.

SECTION 2.1- SIGNIFICANT WORK EXPERIENCE

EDUCATION

Master of Architecture

University of Utah- 1988

Attended 1984-1988

Master's Thesis: *The Laboratory Environment as an Experimental Shell in Which Creativity is Fostered Through Human Interaction and Flexibility*

Bachelor of Arts- Art and Design

Brigham Young University- 1983

Attended 1975-1983

REGISTRATIONS

American Institute of Architects #30093046

NCARB Certificate #41788

Architect- Utah #134250

Architect- Texas #15047

Architect- Nevada #7759

Architect- Idaho #AR-986110

AIA IDAHO

Glen has participated as a volunteer for various AIA functions in Boise, Idaho, including the annual AIA Golf Tournament which raises scholarship funds for architecture students at the University of Idaho.

For the 2022 calendar year, Glen has been nominated to be the AIA Idaho Secretary/Treasurer. If his nomination is approved in November of 2021, this will be the first of 4 years of volunteer service to the AIA Idaho Chapter. The volunteer assignment of Secretary/Treasurer includes the commitment to serve as President Elect for the Chapter for the year 2023, and President for the years 2024 and 2025.

SUSTAINABLE DESIGN RECOGNITION

Glen's projects include 3 AIA COTE/TOP 10 Green Buildings, 9 LEED Platinum buildings, and many LEED Gold and Silver buildings.

WORK EXPERIENCE

Laboratory Architect

Gensler- San Francisco, California

July 2021- present

4 science building projects in design

Senior Laboratory Architect

HERA Laboratory Planners- St. Louis, Missouri

November 2018- July 2021

7 science building projects built or under construction

Founder/President/Principal

Design for Science, LLC- Carlsbad, California

June 2000- June 2019

102 science building projects built or under construction

Vice President- Science & Technology

HOK- Los Angeles, California

June 1999- June 2000

1 science building project built

Principal

GPR Planners Collaborative- Costa Mesa, California

June 1997- June 1999

13 science building projects built

Project Manager, Principal

Research Facilities Design- San Diego, California

June 1988- September 1990

October 1992- June 1997

23 science building projects built

Project Manager

The Stichler Design Group- San Diego, California

September 1990- October 1992

NOTABLE ARCHITECT CLIENTS

Bohlin Cywinski Jackson

EHDD

Gensler

Hacker

Lake Flato

Perkins & Will

Moore Ruble Yudell

Renzo Piano

Leddy Maytum Stacy

Norman Foster

Marlene Imirzian

David Neuman

Page & Turnbull

SmithGroup

Stantec

WRNS Studio

NOTABLE OWNER CLIENTS

Al Nahrain University, Baghdad, Iraq

American University of Beirut

Brigham Young University

Bureau of Alcohol, Tobacco, Firearms, & Explosives

California Academy of Sciences

California State University

Chapman University

City of Pasadena

Desert Research Institute, Reno, Nevada

Gulf of Maine Research Institute

Qatar University

Rice University

Sandia National Laboratories

Santa Barbara Museum of Natural History

Scripps Institution of Oceanography

Southern California Marine Institute

US Geological Survey

US Department of Agriculture

University of California: Berkeley, Irvine, Los Angeles, San Diego, San Francisco, Santa Barbara, Santa Cruz

University of Detroit, Mercy

University of Hawaii

University of Nebraska

University of Nevada, Reno, Las Vegas

University of Southern California

University of Utah

VA Medical Center, Long Beach, California

SECTION 2.1- SIGNIFICANT WORK

WORLD MAP OF PROJECTS

BUILT SCIENCE BUILDING PROJECTS for which Glen Berry has had a major role in the programming, planning, and design of science labs. Only major science building new construction or renovation projects are noted. Small renovations, studies, and unbuilt projects are not included.



Location of **built (or under construction)** science building projects between 1986 and 2021:
Hawaii- 2; California- 92; Mountain West (Idaho, Utah, Nevada, New Mexico, Colorado)- 37; Texas- 3;
Midwest (Illinois, Nebraska, South Dakota, Tennessee)- 5; East Coast (Maine, New York)- 3; Middle East (Lebanon, Qatar)- 3; Asia (Hong Kong)- 1

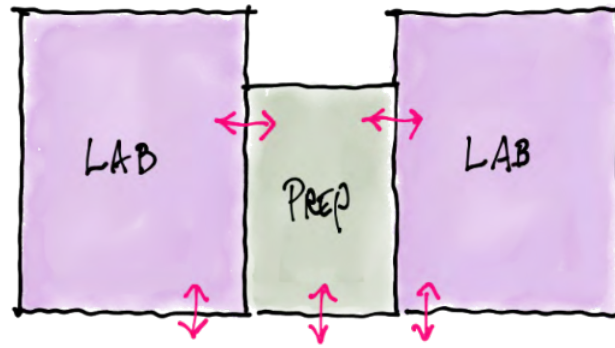
Total number of built science building projects: **146**
Total Construction Value: **~\$4.1 billion (not including escalation)**
Total Building Area: **~9.9 million gross square feet**
Total Lab Area: **~3.8 million net square feet**
Average size per project: **~\$28 million**

SECTION 2.1- SIGNIFICANT WORK

PROTEAN Lab Metrics- Building Design

The traditional science teaching lab model is based upon locating a lab prep room between 2 labs, and then repeating that pattern throughout the building. For many community colleges, this traditional pattern requires hiring more Instructional Aide personnel to operate the lab prep rooms. The traditional model also promotes the silo mentality, of science faculty working in their own area within the building, and not have opportunities to interact on a wider basis with other faculty and with students.

One of the many features of the PROTEAN lab design philosophy is that of combining and consolidating lab prep rooms into once central lab prep area, from which science labs are directly accessed. The integrated or common prep room concept provides greater efficiency with the hiring of Instructional Aide personnel, and promotes greater collaboration and interaction between science faculty and Instructional Aides.



Traditional Lab/Prep Adjacency:

Two labs with prep between →

Lab Prep is segregated and located as isolated pieces between labs which limits flexibility & collaboration



← Traditional Lab/Prep Adjacency

Center for Math & Science

Segregated Lab Prep

Los Angeles Mission College

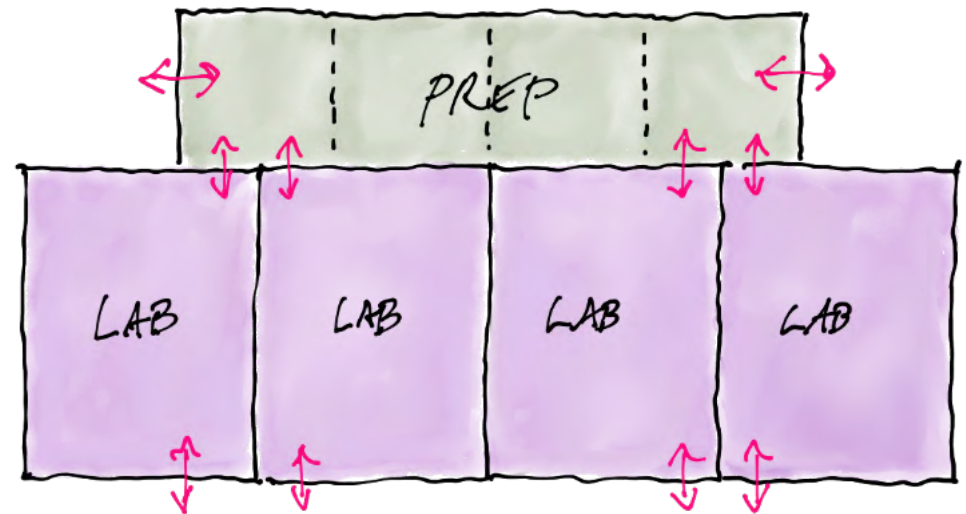
Sylmar, CA

QDG Architects

New PROTEAN Lab/Prep Adjacency →

Multiple labs with common shared Prep area.

Lab Prep spaces are combined to create a common core of lab prep area resulting in greater collaboration and sharing of resources between science disciplines.



First "common prep" design →
 Life Science Building
Common Lab Prep
 Paradise Valley Community College
 Phoenix, Arizona
 Marlene Imirzian & Associates Architects



Math & Science Center ↑
Common Lab Prep
 Southwestern College, Chula Vista, CA
 Marlene Imirzian & Associates Architects

SECTION 2.1- SIGNIFICANT WORK

PROTEAN Lab Metrics- Building Design continued

The new PROTEAN lab concept for lab support and prep promotes science collaboration by allowing different science faculty to interact in the same common prep area. The consistent lab sizes help promote flexibility over the life of the building.



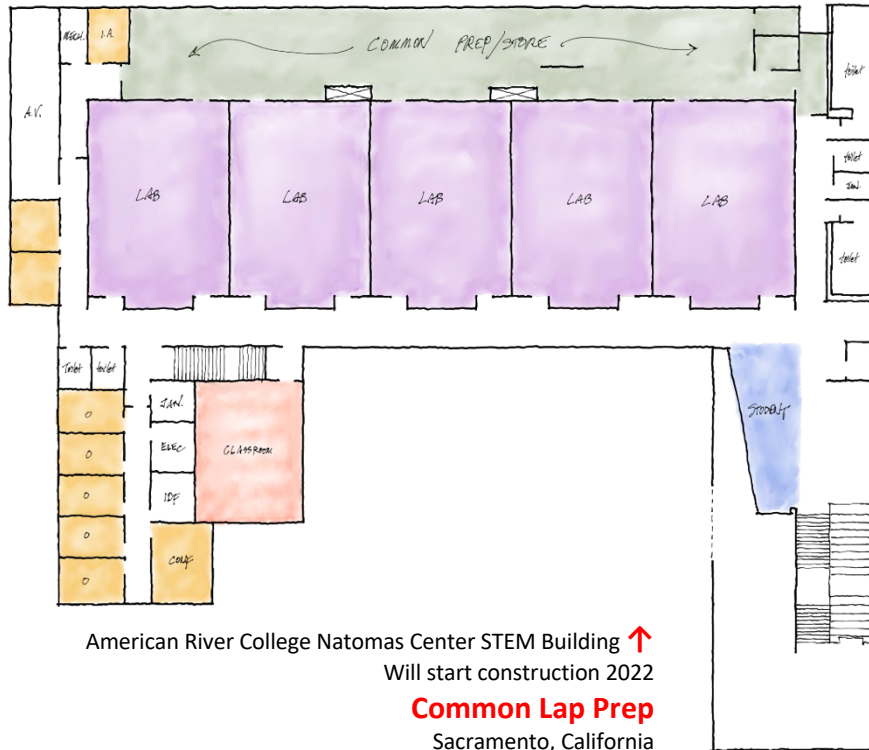
STEM Science Building ↑
Common Lab Prep
 Saddleback College, Mission Viejo, CA
 Dougherty+Dougherty Architects

SECTION 2.1- SIGNIFICANT WORK

PROTEAN Lab Metrics- Building Design continued

The new PROTEAN model is being used for the new City College of San Francisco STEM building being designed by SmithGroup (Building lab program and lab concept design was by Glen Berry/HERA). The new PROTEAN model is also being used by LPA for the new STEM building at Natomas College in Sacramento, CA., currently in DSA review phase. Lab program and lab concept design is by Glen Berry/HERA.

The Miramar Science Building in San Diego, California was the 2nd lab building project to incorporate the combined common Prep scheme. The science faculty at Miramar have expressed very positive reviews of the new lab scheme. See quote on page 12.

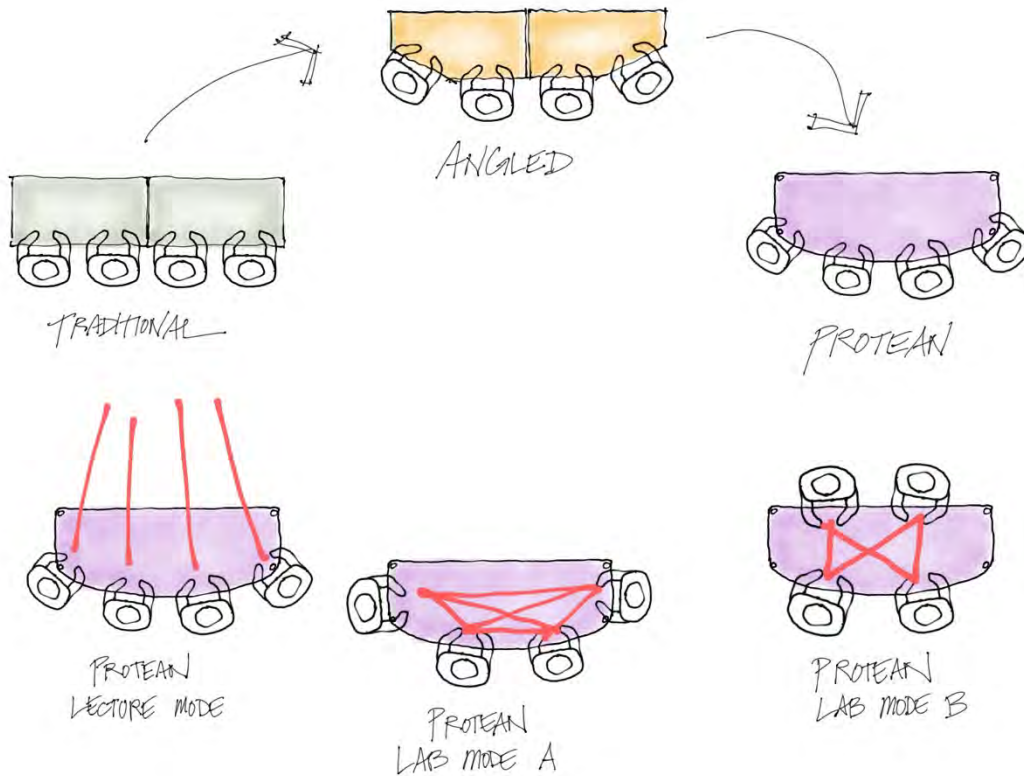


American River College Natomas Center STEM Building ↑
Will start construction 2022
Common Lap Prep
Sacramento, California
LPA, Inc.



Miramar Science Building →
Common Lab Prep
San Diego, California
Marlene Imirzian & Associates, Architects

Evolution of interactive student
learning bench ↓



Physical Science Teaching Lab →
Math & Science Building
Southwestern College, Chula Vista, California
Marlene Imirzian & Associates, Architects

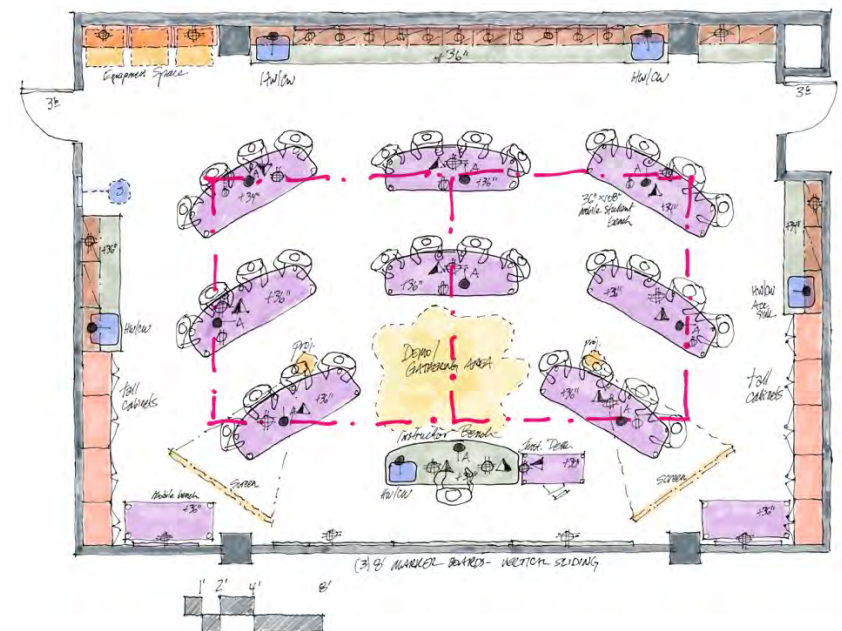
SECTION 2.1- SIGNIFICANT WORK

PROTEAN Lab Metrics- Laboratory Design

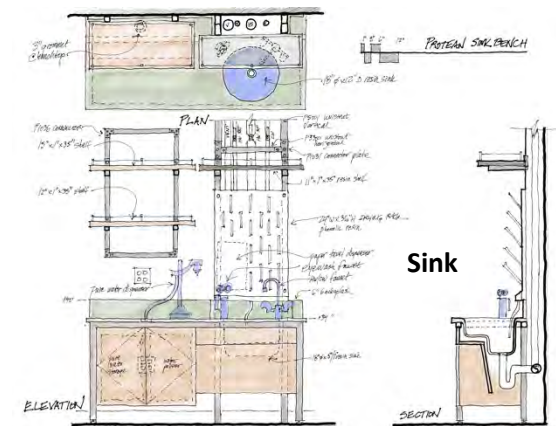
The PROTEAN lab philosophy also applies to the lab interior design, including the lab research bench (research labs) or student lab bench (teaching labs).

Traditional models organized orthogonal lab benches in rows, with all students facing forward. The traditional design, while conducive to lecture in the lab, was not conducive to student-to-student interaction while students are working in pairs or groups of four. The PROTEAN model angles or curves the work surface, so that students are in a better physical position to interact and communicate in a pair or group working context.

The resultant curved bench design is multiplied to create a chevron pattern. Students can quickly orient to the front of the lab while a mini-lecture or demonstration is being performed, and then return to lab mode, working in pairs or groups of three or four.



1. Lab Equipment workstation
2. Lab Storage station
3. Lab Bench workstation
4. Lab Sink workstation
5. Lab Fume Hood workstation





SECTION 2.1- SIGNIFICANT WORK

SELECTED PROJECTS- Continued

Rinker Health Science Building

Chapman University Health Science Campus; Irvine, California
95,000 gsf; \$28 million construction budget

Completion: 2015

Architect: Aday Architects, San Dimas, California

Lab Planner: Glen Berry, Principal, Design for Science, LLC

Photo by Chapman University

Innovation: Pharmacy teaching labs are designed with pentagon pattern student islands that encourage student interaction and collaboration.

Muir Biology Building Renovation

University of California, San Diego

La Jolla, California

8,400 gsf

\$4 million construction budget

Completion: 2014

Architect: RBB, Inc., Los Angeles, California

Lab Planner: Glen Berry, Principal, Design for Science, LLC

Photo By RBB

Innovation: Highly flexible, non-proprietary lab system integrated with MEP systems.





“Glen brought his vision to the science spaces and seamlessly incorporated our ideas and needs to create a design that surpassed our expectations. Thanks to Glen the space is incredibly functional and efficient. He was detail oriented while keeping an eye on the big picture and timeline. For example, he oriented the advanced chemistry instrumentation (NMR, uHPLC, AA, GC-MS, etc) so that students and staff would have safe and adequate spaces to work and teach. There were also multiple complex infrastructure needs for the equipment including vibration control, proper ventilation for various gases, and of course electrical that Glen coordinated with ease. Due to Glen's creative problem solving we ended up with a secured room for the very sensitive and expensive equipment but with separate shared teaching areas for multiple classrooms... Ingenious! We offer tours of the new science building to recruit potential students. It is an aesthetically appealing, environmentally friendly, open concept design that is well lit with natural light and perfect for staff and students to "live in". I continue to brag about how great our science building is compared to the other campuses in the San Diego Community College District!”

Vuong Nguyen- Instructional Support Supervisor
Biological and Physical Sciences
Miramar College, San Diego

Innovation: Teaching labs designed with integral research project work rooms adjacent.

SECTION 2.1- SIGNIFICANT WORK SELECTED PROJECTS- Continued

Science Building

Miramar College

San Diego, California

49,000 gsf

\$34 million construction budget

Completion: 2016

Architect: Marlene Imirzian & Associates, Architects, Phoenix, Arizona

Lab Planner: Glen Berry, Principal, Design for Science, LLC

Photo by Marlene Imirzian & Associates, Architects

Innovation: Common, central lab prep zone encourages faculty interaction and scientific collaboration.



Scripps Pitzer Science Building

Claremont Colleges

Claremont, California

58,000 gsf

\$65 million construction budget

Completion: 2023 (currently under construction)

Architect: Carrier Johnson, San Diego, California

Lab Planner: Glen Berry, Principal, HERA Lab Planners

Environmental Teaching Lab design sketch by Glen Berry



SECTION 2.1- SIGNIFICANT WORK

SELECTED PROJECTS- Continued

Ralph & Betty Engelstad Cancer Research Building

Nevada Cancer Institute

Las Vegas, Nevada

100,000 gsf

\$60 million construction budget

Completion: 2009

Architect: TKC Design, PC, Las Vegas, Nevada

Lab Planner: Glen Berry, Principal, Design for Science, LLC

Photo by TKC Design

Innovation: Non-proprietary PROTEAN lab system provided competitively bid system.

Applied Physics & Mathematics Building Renovation

University of California, San Diego

La Jolla, California

42,000 gsf

\$7.5 million construction budget

Completion: 2006

Architect: RBB, Inc., Los Angeles, California

Lab Planner: Glen Berry, Principal, Design for Science, LLC

Photo by Glen Berry

Innovation: Low 11' floor-to-floor height of existing building required careful integration of MEP system infrastructure and distribution.





MESOM Laboratory (Marine Ecosystem, Sensing, Observation & Monitoring)

Scripps Institution of Oceanography- La Jolla, California
\$20 million construction budget; 39,500 gsf; completed 2013

Architect: HACKER, Portland, Oregon

California Higher Education Sustainable Design, Honorable Mention, 2015

Photo by Rudolph & Sletten



SECTION 2.2- SIGNIFICANT AWARDS

The following projects have received the awards noted.

Glen Berry was responsible for the laboratory planning and design of all projects noted. Glen Berry played an integral role in the planning and design of not only the labs, but the buildings in general. For many of these projects, Glen had major involvement in the building design, especially the space planning diagrams for the buildings, working directly with the architectural design team.

Life Science Building

LEED Gold

Irvine Valley College- Irvine, California

\$16 million construction budget; 30,000 gsf; completed 2012

Architect: Dougherty+Dougherty, Costa Mesa, California

Gold Nugget Grand Award Winner 2014

AIA Orange County Savings by Design Award Winner 2014

Photo by Dougherty+Dougherty



Life Science Building

Paradise Valley Community College- Phoenix, Arizona

\$12 million construction budget; 38,000 gsf; completed 2010

Architect: Marlene Imirzian & Associates, Architects, Phoenix, Arizona

AIA Western Mountain Region Design Award

Valley Forward Environmental Excellence Crescordia (top award)

AIA Arizona Design Award

Photo by Marlene Imirzian & Associates, Architects



SECTION 2.2- SIGNIFICANT AWARDS Continued

Watsonville Water Quality Laboratory

Watsonville, California

\$11 million construction budget; 20,000 gsf; completed 2009

Architect: WRNS Studio, San Francisco, California

AIA/COTE Top 10 Green Buildings 2010

AIA California Council Merit Award 2011

ASHRAE Technology Award 2011

California Green Building Wood Design Award 2010

Photo by WRNS Studio

California Academy of Sciences

Golden Gate Park, San Francisco

\$500 million construction budget; 410,000 gsf; completed 2008

Design Architect: Renzo Piano Building Workshop, Genoa, Italy

Executive Architect: Gordon Chong Architects and Stantec, San Francisco, CA

Largest LEED Platinum building in the world at time of construction completion

Named by TIME magazine in 2008 as one of the *Great Buildings of the World*

ASLA Honor Award 2009

Global Holcim Award Innovation Prize 2009

Award of Excellence Urban Land Institute 2009

Photo by Glen Berry



Michael J. Homer Science & Student Life Center

Sacred Heart School- Atherton, California

\$22 million construction budget; 44,100 gsf; completed 2010

Architect: Leddy Maytum Stacy Architects, San Francisco, California

AIA/COTE Top 10 Green Buildings 2010

AIA National Award of Excellence- Educational Design Award

McGraw Hill Construction- Best K-12 School in California

Sustainable Green Building Award- San Mateo County

Photo by Leddy Maytum Stacy Architects



SECTION 2.2- SIGNIFICANT AWARDS

Continued

Francis Parker School

San Diego, California

\$48.4 million construction budget; 122,000 gsf; completed 2007

Architect: Lake Flato, San Antonio, Texas

**AIA Committee on Architecture for Education Facility Design Award
2009**

AIA San Antonio Design Award 2008

AIA San Diego Committee on the Environment Award 2008

AIA San Diego Design Award 2008

Photo by Lake Flato

Biomedical Sciences Building

LEED Gold

University of California, Santa Cruz

\$40 million construction budget; 95,000 gsf; completed 2007

Architect: EHDD, San Francisco, California

AIA San Francisco Merit Award 2015

Photo by EHDD



Betty Irene Moore Natural Sciences Building

Mills College- Oakland, California

\$7 million construction budget; 26,000 gsf; completed 2007

Architect: EHDD, San Francisco, California

Merit Award Excellence in Architecture for Building Additions 2008

SCUP/AIA Committee on Architecture for Education

Photo by EHDD



SECTION 2.2- SIGNIFICANT AWARDS

Continued

Health Sciences Building

College of Southern Nevada

\$16 million construction budget; 80,000 gsf; completed 2005

Architect: JMA Architecture Studios

AIA Nevada Citation Award Built Category 2006

Photo by JMA Architecture

Global Ecology Center

LEED Gold

Carnegie Institution of Washington- Stanford, California

\$4.1 million construction budget; 11,000 gsf; completed 2004

Architect: EHDD, San Francisco, California

AIA/COTE Top 10 Green Buildings 2007

AIA San Francisco Energy & Sustainability Award 2005

Lab of the Year Special Mention- R&D Magazine 2005

Photo by EHDD



Lick Wilmerding High School Addition/Renovation

LEED Platinum

San Francisco, California

61,000 gsf

\$60 million construction budget

Completion: 2019

Architect: EHDD, San Francisco, California

Lab Planner: Glen Berry, Principal, Design for Science, LLC

AIA California Merit Award 2020

Living Building Challenge Target

Net Positive Energy Target

Chemistry Teaching Lab Design Sketch by Glen Berry

SECTION 2.3- SIGNIFICANT PUBLICATIONS

PUBLICATIONS

The following articles have been published about science building projects for which Glen Berry has provided laboratory design consulting services.

California Academy of Sciences: Greening a Higher Ground

Smithsonian Magazine, Nov 2008

Authors: Aleta George, Keenan Mayo, David Zax, Kenneth R. Fletcher

Great Buildings of the World- California Academy of Sciences

TIME Magazine, 2008

California Academy of Sciences Evolving Green- Building becomes an exhibit itself

AIArchitect, 2006, June

Francis Parker School, San Diego

Architect Magazine, 2009 July 30; Author: Bay Brown

Watsonville Water Resources Center

Architect Magazine, 2010 Oct 06; Author: Vernon Mays

Allied Health Sciences Building at Southwestern College Higher Education Center

Architect Magazine, 2018 Oct 05; Author: Miabelle Salzano

A Model Success: The Carnegie Institute for Global Ecology

Case Study: Global Ecology Center

GreenSource Magazine, 2007, January

Authors: Kirsten Weeks, David Lehrer, and Jonathan Bean

New Science Building Seen as Job Creator

Miramar Science Building

San Diego Union-Tribune, 2015, Nov 30; Author: Gary Warth

On Becoming a Lab Planner- An expert's take on how to develop one's career path

Lab Manager Magazine, 2020, October 28

Author: Marybeth Didonna; Interview with: Glen Berry, AIA

CONFERENCE PRESENTATIONS

Optimally Operating Chemistry and Biology Laboratory Facilities with Advanced Curricula in a College Campus

At the invitation of Paulo Fundament, PE, Glen Berry was invited to speak at the September 2015 Community College Facility Coalition in Sacramento, California.

Sputnik Science & Engineering Buildings: Baine or Boon?

At the invitation of David Neuman, FAIA, Glen Berry, (with Stephen Farneth, FAIA, Lisa Matheson, FAIA, and Simin Naaseh, PE), was invited to present a concurrent session at the July 2015 Society for College and University Planning (SCUP) annual international conference held in Chicago.

Webinar: Sputnik Science & Engineering Buildings: Baine or Boon?

Sponsored by the California Preservation Foundation. Webinar presentation with David Neuman, FAIA, Stephen Farneth, FAIA, Lisa Matheson, FAIA, and Simin Naaseh, PE. 2016.

Energy Efficiency in Vivaria

At the invitation of Peter Rumsey, PE, Glen Berry was invited to co-present with Peter at the October 2007 International Institute for Sustainable Laboratories (I2SL) conference in North Charleston, South Carolina.

College/University Presentations

Glen has presented to many college and university science departments as part of the project lab design workshops. He has presented lessons learned, critical metrics for lab, PROTEAN lab design philosophy, and examples of other similar projects.

These presentations include Hong Kong Science Park, Qatar University, Middle Tennessee State University, University of California, Chapman University, Claremont Colleges, and several community colleges.

A comprehensive list of lab sketchbooks can be found at www.glenberryia.com.

SECTION 3- EXHIBITS

Exhibit #1: Glenda K. Corrigan Health Sciences
Dakota Wesleyan University- Mitchell, SD

Exhibit #2: Math & Science Center
Southwestern College- Chula Vista, CA

Exhibit #3: Concrete Construction &
Management Building- Middle Tennessee State
University- Murfreesboro, TN

Exhibit #4: Syngenta LEAF Research Center
Nampa, Idaho

Exhibit #5: Hong Kong Science Park
Hong Kong, China

Exhibit #6: East Campus Science Building
Los Angeles Mission College
Sylmar, CA

Exhibit #7: Life Science Building
University of Hawaii- Honolulu, Hawaii

Exhibit #8: MESOM Laboratory
Scripps Institution of Oceanography- La Jolla, CA

Exhibit #9: College of Engineering
Qatar University- Doha, Qatar

Exhibit #10: California Academy of Science
San Francisco, CA



SECTION 3- EXHIBITS

Exhibit #1: Glenda K. Corrigan Health Sciences Center Dakota Wesleyan University

Dakota Wesleyan University

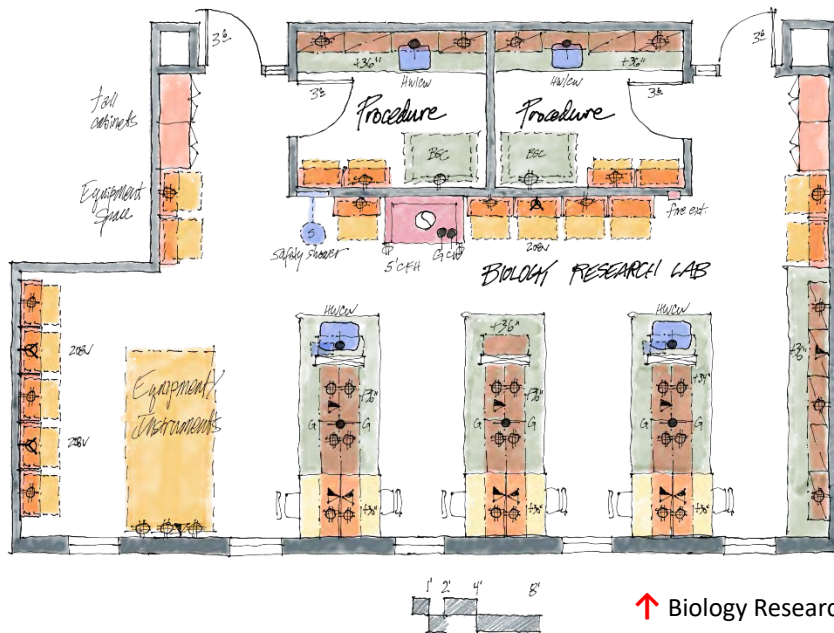
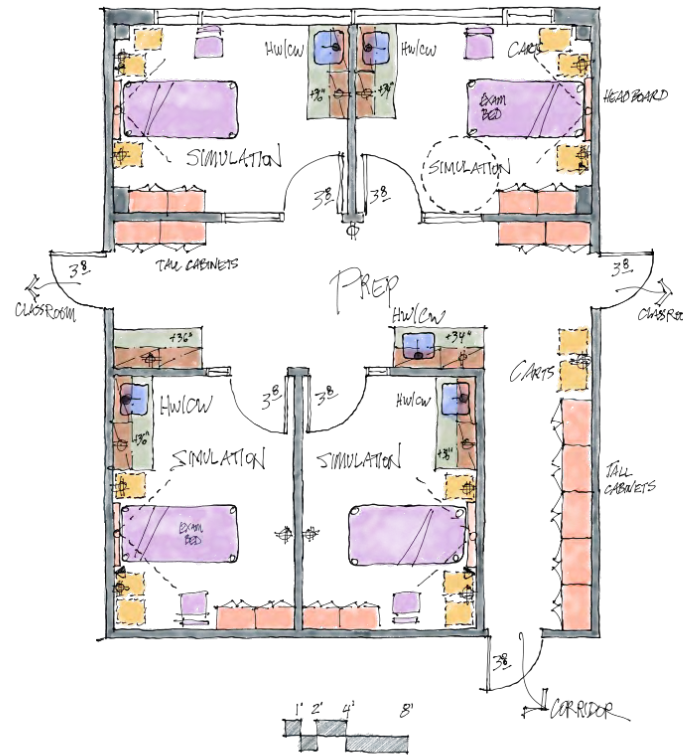
Mitchell, South Dakota

48,000 gsf; \$12 million construction budget; Completion: 2012

Architect: Puetz Design+Build, Mitchell, South Dakota

Lab Planner: Glen Berry, Principal, Design for Science, LLC

Nursing Skills Teaching Lab →



↑ Biology Research Lab

The Challenge

The building program consists of a multidisciplinary science center, consisting of biology, chemistry, physics, and health science.

The various pedagogy requirements require a pattern language of common denominators that allow different lab types to fit within the fixed envelope of glass, steel, and concrete.

Glen Berry Role

Glen was responsible for laboratory programming, planning, and design. He met with the Dakota Wesleyan science faculty in order to understand how they work and interact with other faculty and with students. He presented to the science departments and the university administrators a summary of lessons learned and design considerations. He also worked with the Architect to develop the concept plan designs for the building.

Outcome/Innovation

Lab types were developed around a 10.5' lab planning module, with adjacent lab prep/store. Glen developed a flexible lab design that allows for adaptability, flexibility, and versatility over the life span of the building as pedagogy, technology, and personnel change. Life science research labs are designed to be multi-functional within a life science context.

I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

- laboratory planning and design as lead lab planning consultant

Herm Harms, AIA; Department Head Architect at Puetz Design+Build.

Email: harms@puetzdesignbuild.com

Principal-in-Charge for the Corrigan Health Sciences Center

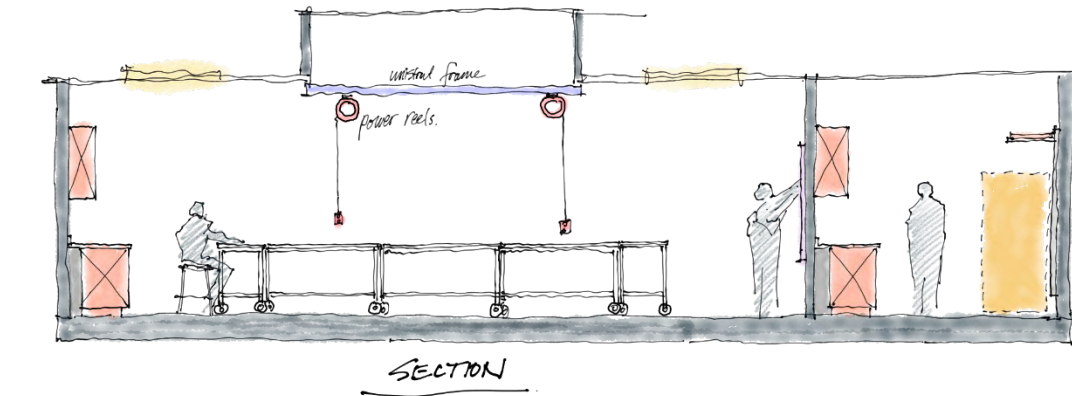
SECTION 3- EXHIBITS

Exhibit #1: Glenda K. Corrigan Health Sciences Center Continued

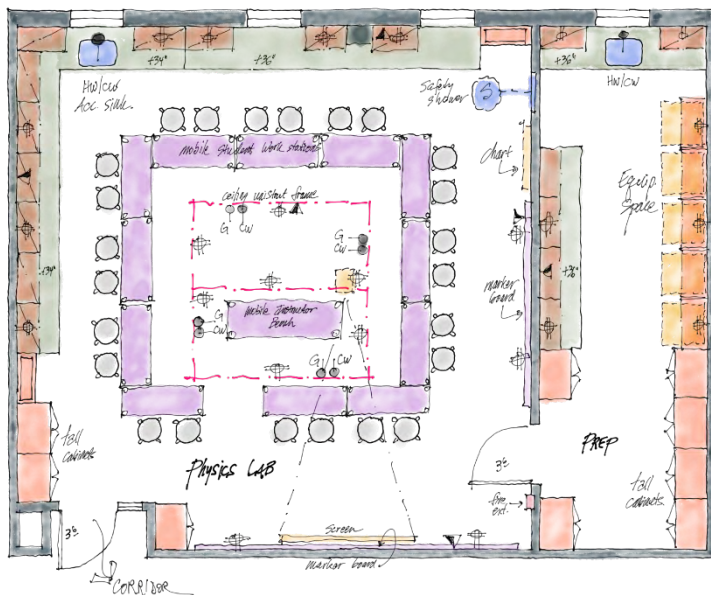
Illustrations were prepared by Glen Berry, as part of a 42 page 11x17 lab design sketchbook. The Architects and Engineers used the lab design information prepared by Glen Berry to prepare construction documents for the project. The science instruction laboratories are designed as **PROTEAN** labs, and function as both hands-on learning centers and lecture classrooms.

"Glen Berry provided an essential innovative lens on the design of the Corrigan Health Sciences Center. The facility integrates simulation labs for nursing and athletic training, with state-of-the-art science labs for chemistry, biology, and physical sciences, alongside innovative classroom design that has allowed for flexibility in content delivery depending on faculty style, approach, and preference. His ability to blend emerging pedagogies with adaptive architectural design has made our facility the envy of science faculty across our state. We are extraordinarily pleased with the versatility of the space created, the manner in which the space allows for the delivery of multiple pedagogies, particularly experiential learning, and the infrastructure within the facility that enabled undergraduate research and hands-on learning to be facilitated across the health sciences and science curriculum. The careful attention to design and emerging pedagogies have enabled the university to grow its enrollment in the health sciences as well as expand it's offerings at both the undergraduate and graduate levels. We are appreciative of how we can continue to adapt learning in this space and how the state of the art labs have allowed students to have experiences they often are unable to have at other universities until they enter graduate school."

Dr. Amy Novak, President
Dakota Wesleyan University, Mitchell, South Dakota
Email: amy.novak @dwu.edu



Physics Teaching Lab section, photo, and concept sketch. Open flexible design allows for improved learning.





Anatomy Teaching Lab ↑



Chemistry Teaching Lab ↑

SECTION 3- EXHIBITS

Exhibit #2: Math & Science Center- Southwestern College

Chula Vista, California

103,000 gsf; \$72 million construction budget; Completion: 2019

Architect: Marlene Imirzian & Associates, Architects, Phoenix, Arizona

Lab Planner: Glen Berry, Principal, Design for Science, LLC

2019 CMAA San Diego Chapter – Project Achievement Award for buildings greater than \$25 million

LEED Silver Photos by Rudolph & Sletten Construction.

The Challenge

Design flexible lab prototypes that can adjust to changes in technology, personnel, and pedagogy over the 100 year life of the building. Organize building in a way that promotes scientific interaction and collaboration. Lab types included anatomy, astronomy & physics, biology, biotechnology, chemistry, and microbiology.

Glen Berry Role

Glen was responsible for laboratory programming, planning, and design. He met with the Southwestern College science faculty in order to understand how they work and interact with other faculty and with students. He also worked with the Architect to develop the concept plan design for the lab wing.

Outcome/Innovation

Glen developed a base grid pattern language for the labs, which allowed for common denominators to inform the basic lab prototype, from which specific labs were designed for each discipline. Lab prep functions were combined into one continuous space on each floor, thereby promoting greater communication and collaboration between science faculty.

I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

- laboratory planning and design as lead lab planning consultant Marlene Imirzian, FAIA

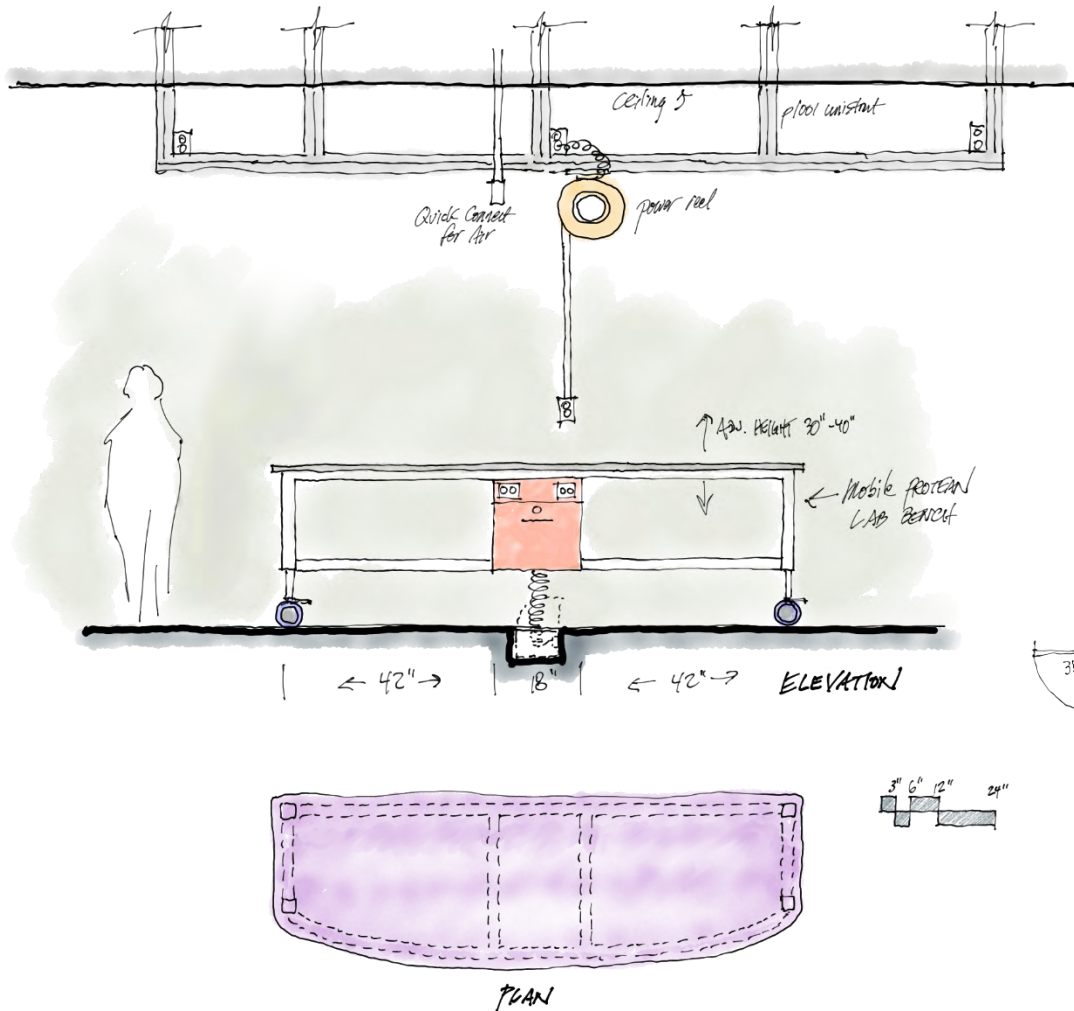
Principal at Marlene Imirzian & Associates, Architects

Email: mimirzian@imirzian-architects.com

Principal-in-Charge for Math & Science Center at Southwestern College

SECTION 3- EXHIBITS

Exhibit #2: Math & Science Center- Southwestern College Continued

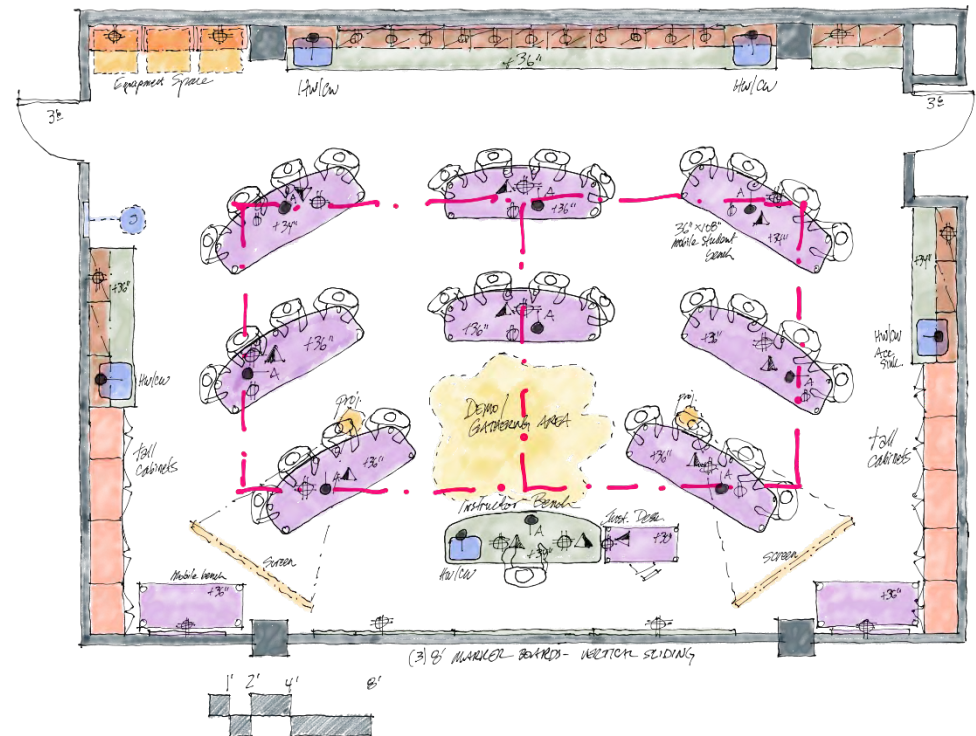


↑ PROTEAN bench design accommodates various teaching methods and improves student collaboration.

Illustrations were prepared by Glen Berry, as part of a 311 page 11x17 lab design sketchbook. The Architects and Engineers used the lab design information prepared by Glen Berry to prepare construction documents for the project. The science instruction laboratories are designed as both hands-on learning centers and lecture classrooms. In some labs, students are oriented similar to Harvard Business School Case Study labs with chevron pattern of science benches and curved bench work surface. These features promote faculty/student interaction and student/student interaction.

← Physics Teaching Lab PROTEAN Lab Bench design. Highly flexible systems configuration provides adaptability for various teaching methods.

Physics Teaching Lab design sketch ↓



SECTION 3- EXHIBITS

Exhibit #3: School of Concrete & Construction Management Building – Middle Tennessee State University

Murfreesboro, Tennessee

55,000 gsf; \$32 million construction budget;

Completion: 2022 (currently under construction).

Architect: Orcutt Winslow Architects, Nashville, Tennessee

Lab Planner: Glen Berry, Principal, HERA Laboratory Planners

The Challenge

Design flexible lab prototypes that can respond to challenging needs in construction lab design. The concrete construction labs are noisy, dusty, and get a lot of abuse. They require a flexible solution that can provide students with a simulated real-life work environment, and also meets the needs of current pedagogy.

Glen Berry Role

Glen was responsible for laboratory programming, planning, and design. He met with the MTSU construction faculty in order to understand how they work and teach and how they need the students to work and interact with each other inside the lab environment.

Outcome/Innovation

Glen developed a lab design that allows for adaptability, flexibility, and versatility over the life span of the building as pedagogy, technology, and personnel change. Heavy duty lab components were designed to stand up to years of abuse, and provide an interactive learning environment. Equipment space is easily converted to bench space, and visa-versa.

I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

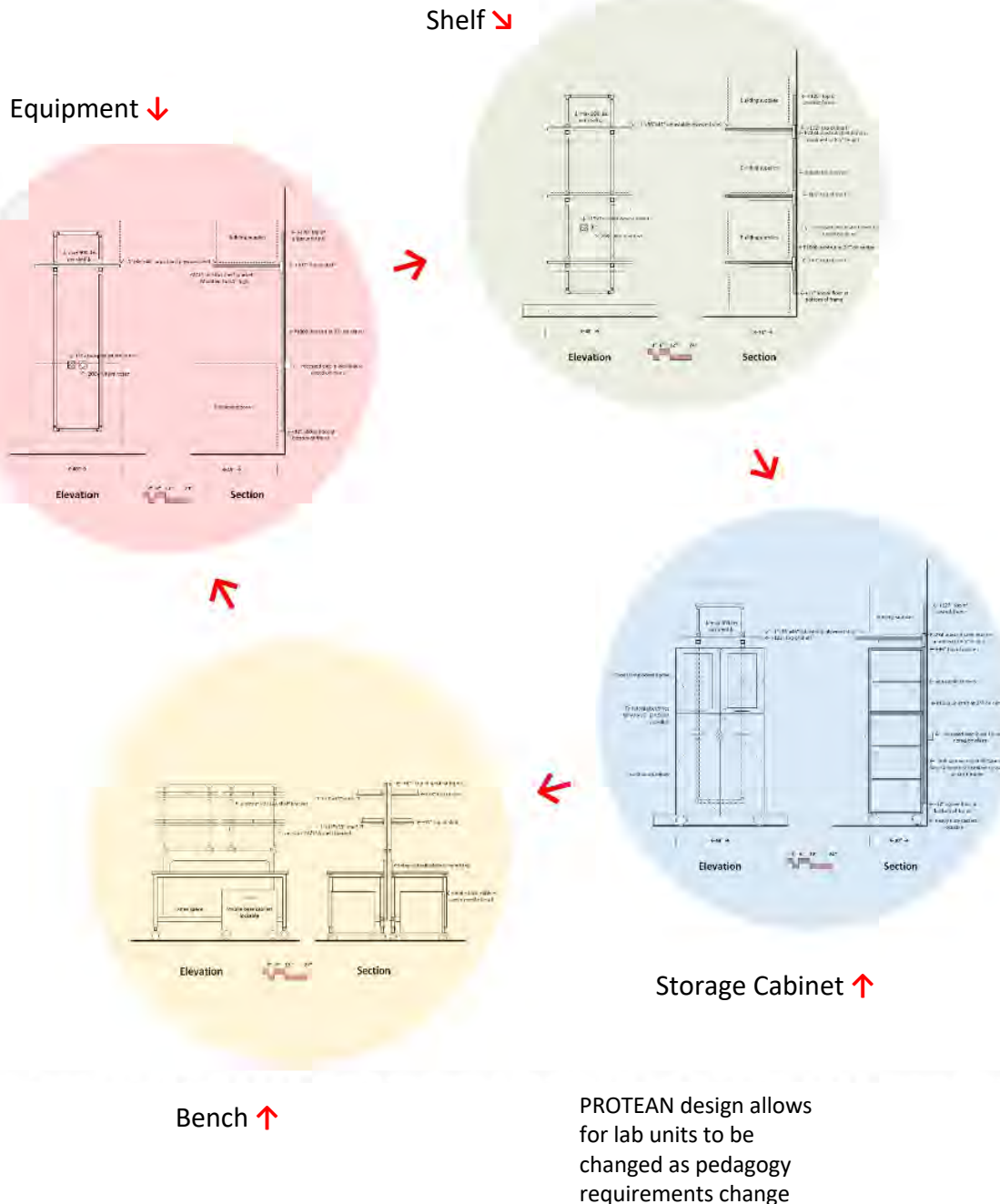
- laboratory planning and design as lead lab planning consultant

Sarah Dexheimer, RA

Associate at Orcutt Winslow Architects, Nashville, Tennessee

Email: dexheimer.s@owp.com

Project Architect for the new Concrete & Construction Building



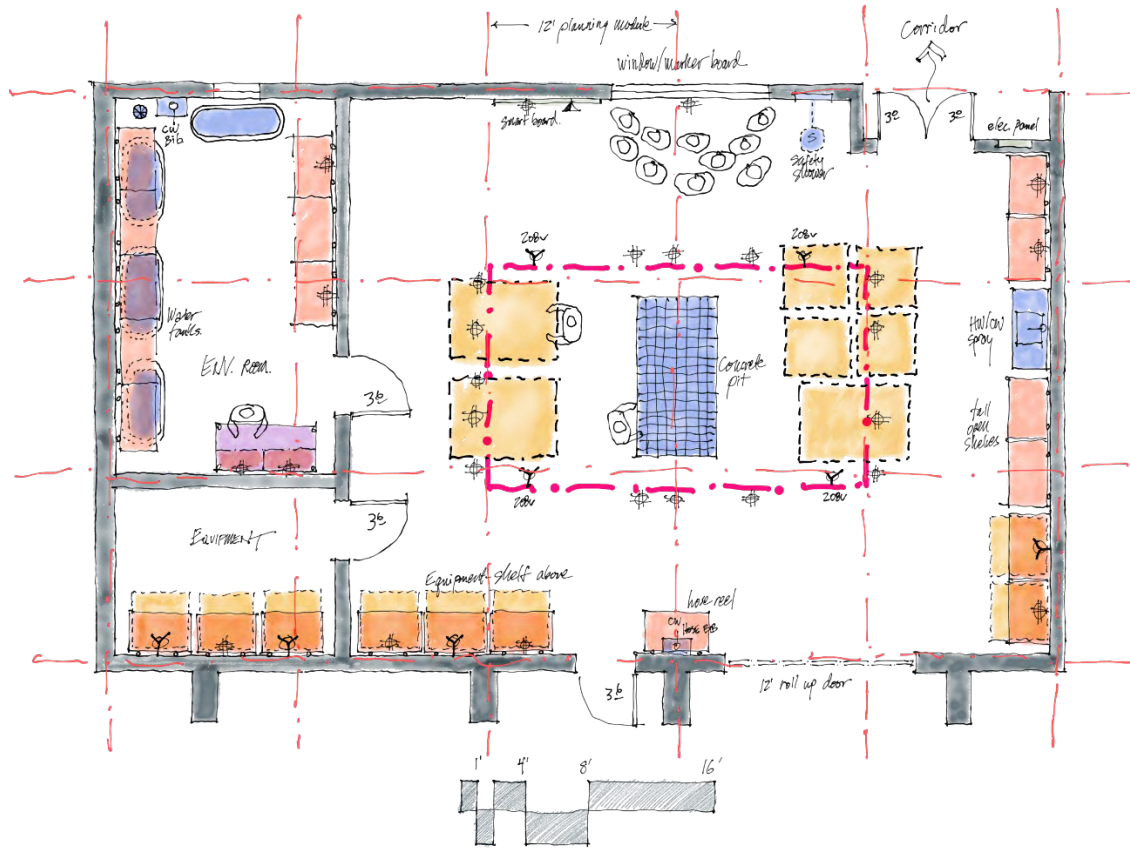
SECTION 3- EXHIBITS

Exhibit #3: Concrete & Construction Management Building Continued

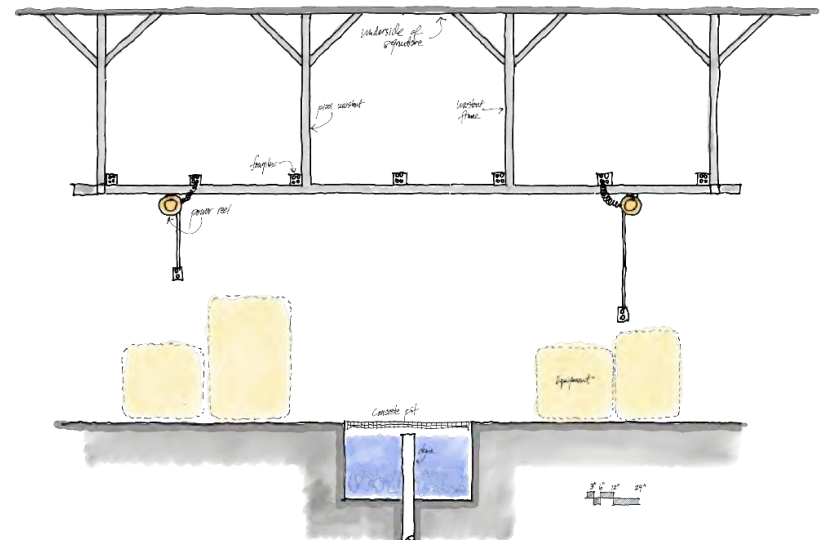
Illustrations were prepared by Glen Berry, as part of a 45 page 11x17 lab design sketchbook. The Architects and Engineers used the lab design information prepared by Glen Berry to prepare construction documents for the project. The science instruction laboratories are designed as multi-function labs, and function as both hands-on learning centers and lecture classrooms. Students are taught in construction labs that mirror real-life concrete construction context, with concrete mixers, construction tools and materials, and storage for all of these.

"Entering into the design phase of our concrete and construction laboratories I had visions of open spaces, durable surfaces and everything in its place. When Glen got a hold of our vision he turned it into something even grander with modular storage adaptable to our constantly changing inventory of material. He combined fluid work spaces with classic benchtop labs to maximize the flexibility of our evolving teaching and research activities"

Dr. Heather Brown, Professor
MTSU School of Concrete & Construction Management
Email: heather.brown@mtsu.edu



↑ Concept design sketches for concrete mixing lab →
Open, flexible design promotes greater student collaboration.



SECTION 3- EXHIBITS

Exhibit #4: Syngenta LEAF Research Center

Nampa, Idaho

35,000 gsf; \$13 million construction budget;

Completion: 2021 (currently under construction).

Architect: Hummel Architects, Boise, Idaho

Lab Planner: Glen Berry, Principal, HERA Laboratory Planners

The Challenge

Develop a research/analytical lab design that can respond to changes in research missions, personnel, and technology. The lab types are for a variety of seed development bioengineering and process. Not all labs required typical 100% lab exhaust.

Glen Berry Role

Glen was responsible for laboratory programming, planning, and design. He met with Syngenta research lab personnel in order to understand how they work and interact with other associates.

Outcome/Innovation

Glen developed a flexible lab concept that allows scientists to configure lab space after occupancy and in the future. Labs are highly reconfigurable, with moveable/adjustable lab tables, wall shelving, and storage components. Labs that do not require typical 100% exhaust requirements were consolidated into the Physiology Work Room suite. Other wet labs using chemicals were consolidated into the Seed Health Lab suite. The lab separation between chemical use and non-chemical use resulted in energy efficient building HVAC systems with significant savings compared to other similar lab projects with combined lab types mixed together. The two different lab suites were located adjacent to each other and circulation was defined in a way to allow for ease of movement between the two suites. Glen Berry was responsible for the general lab planning and space planning of the lab and headhouse environments.

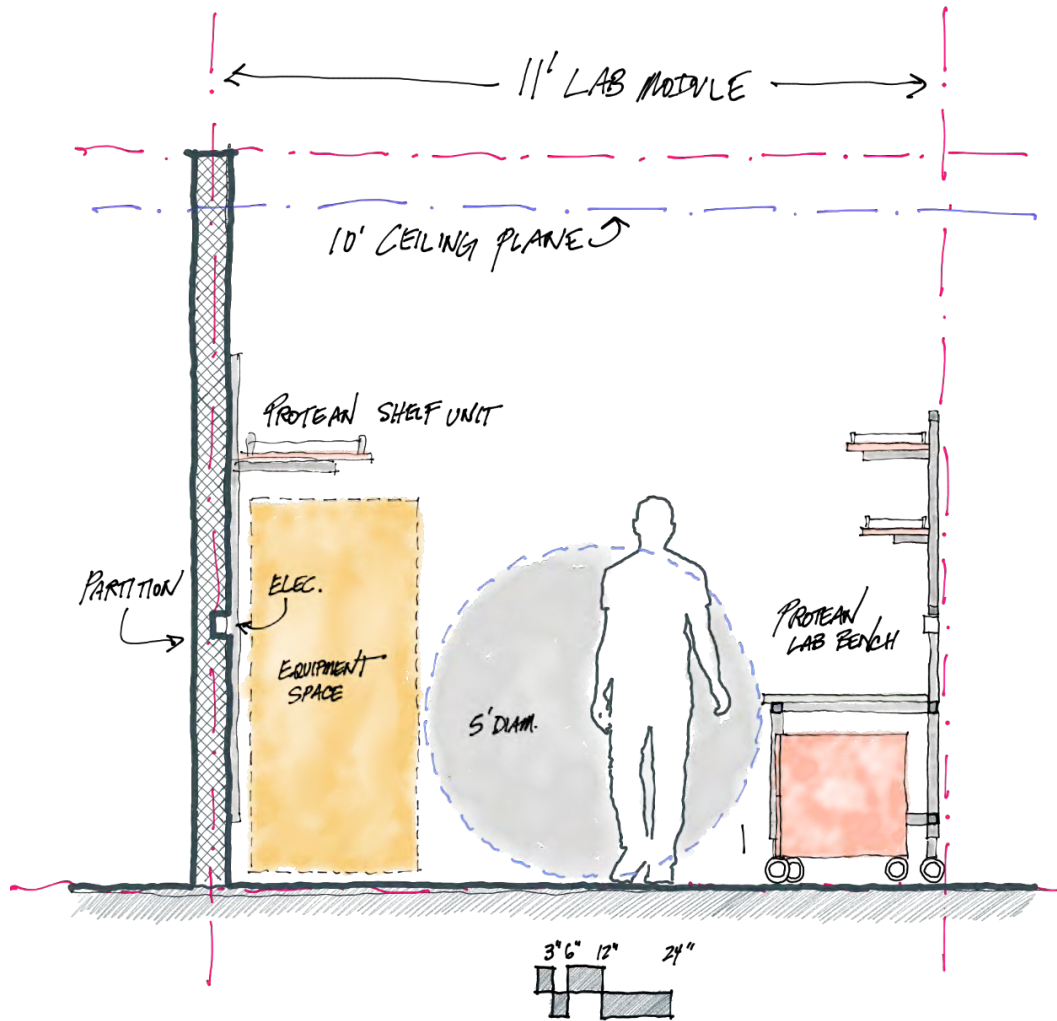
I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

- laboratory planning and design as lead lab planning consultant Ed Daniels, AIA

Principal, Hummel Architects

Email: eddaniels@hummelarch.com

Principal-in-Charge for Syngenta LEAF Project



↑ Lab planning module provides pattern language grid for flexible lab design.

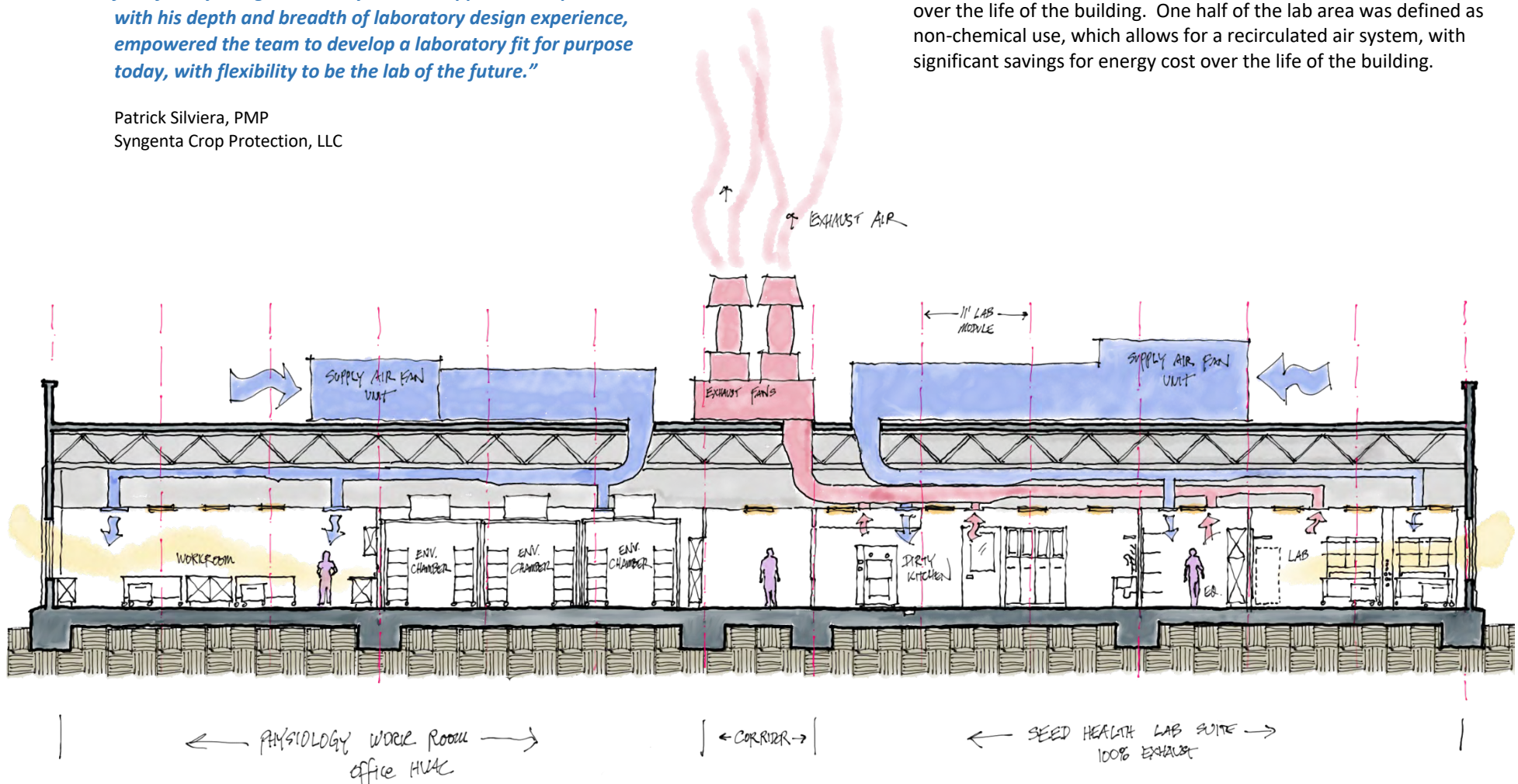
SECTION 3- EXHIBITS

Exhibit #4: Syngenta LEAF Research Center Continued

"When Glen came on board the Project Leaf team, he quickly took the thoughts, needs, and wishes of the project team and turned them into the laboratory program, which became the backbone of the project. This backbone document contained crucial information which was invaluable during the final document development phase to ensure the needs of the users were incorporated into the final facility design. Glen's systematic approach coupled with his depth and breadth of laboratory design experience, empowered the team to develop a laboratory fit for purpose today, with flexibility to be the lab of the future."

Patrick Silveira, PMP
Syngenta Crop Protection, LLC

Illustrations were prepared by Glen Berry, as part of a 78 page 11x17 lab design sketchbook. The lab design information was used by HERA Lab Planners to prepare laboratory construction documents. The Architects and Engineers also used the lab design information prepared by Glen Berry to prepare construction documents for the project. All features of the labs, except for sinks and fume hoods, are designed to be moveable and adjustable to adapt to changing needs over the life of the building. One half of the lab area was defined as non-chemical use, which allows for a recirculated air system, with significant savings for energy cost over the life of the building.



SECTION 3- EXHIBITS

Exhibit #5: Hong Kong Science Park

Hong Kong, China

~25,500 gross square meters (gsm); \$1.6 billion Hong Kong Dollars construction budget; Completion 2025

(Phase 1 under construction in 2021).

Architect: Ronald Lu & Partners, Hong Kong, China.

Lab Planner: Glen Berry, AIA, HERA Laboratory Planners.

Drawings by HERA Laboratory Planners.

The Challenge

Develop a multidisciplinary lab design that can respond to changes in research missions, personnel, and technology. The project consists of 3 distinct buildings, each with a pre-defined research program function.

Building 12W-A- BSL2/BSL3 Research Lab Units (~13,000 gsm)

Building 16E-A- BSL2 Research Lab Units (~10,000 gsm)

Building 20E-A- Bioengineering Research Lab Units (~2,500 gsm)

Glen Berry Role

Glen was responsible for laboratory programming, planning, and design. The Hong Kong Science Park is built as a lab tenant lease laboratory environment. Specific lab users are not known until after construction is complete. Design of highly flexible/adaptable labs is a key consideration in the project design.

Outcome/Innovation

Glen developed a flexible lab concept that allows scientists to configure lab space after occupancy and in the future. Lab modules were designed with a “kit of parts” that allows potential lab tenants to pick from a simple menu of lab components:

1. Lab Bench station; 2. Lab Sink station; 3. Lab Fume Hood station; 4. Lab Storage Cabinet; 5. Lab Equipment space with shelf

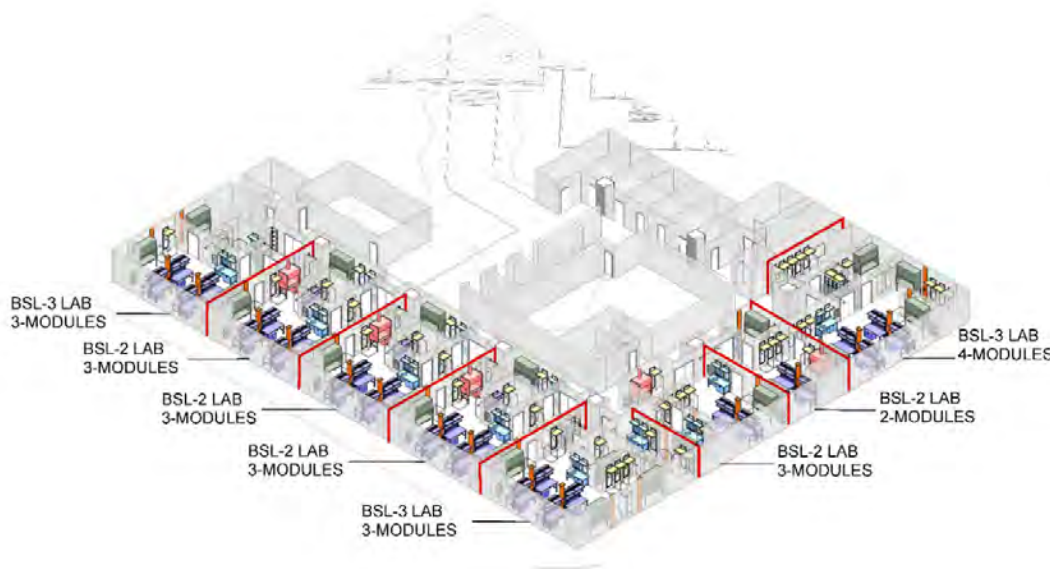
I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

- laboratory planning and design as lead lab planning consultant

Kenneth Ip, HKIA, Associate; Ronald Lu & Partners

Email: kennethip@rlphk.com

Project Manager for Hong Kong Science Park



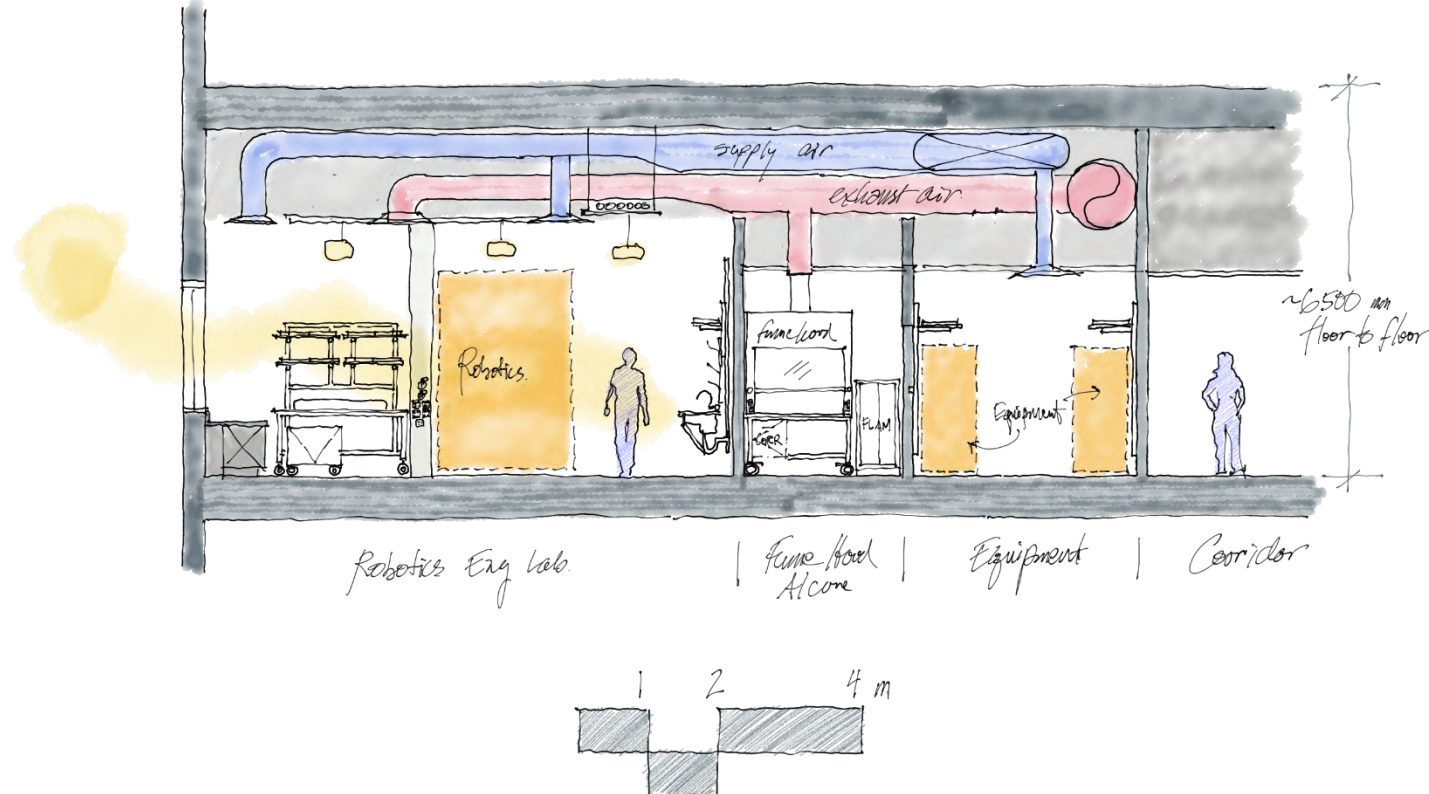
SECTION 3- EXHIBITS

Exhibit #5: Hong Kong Science Park Continued

Illustrations were prepared by Glen Berry, as part of a 130 page A3 lab design sketchbook in metric scale. The Architects and Engineers use the lab design information prepared by Glen Berry to prepare construction documents for the project. The bioengineering research labs were designed as multi-function lab space.

Future lab tenants will be able to fit out their labs based on current and future needs. The flexible design allows for a wide variety of lab design options. 3 key lab prototypes were addressed in the lab design:

1. Biosafety Level 2 research lab unit.
2. Biosafety Level 3 research lab unit.
3. Bioengineering research lab unit.



SECTION 3- EXHIBITS

Exhibit #6: Center for Math & Science

Los Angeles Mission College

Sylmar, California

95,000 gsf; \$70 million construction budget; Completion: 2012

Architect: QDG Architecture, Los Angeles, California

Lab Planner: Glen Berry, Principal, Design for Science, LLC

LEED Platinum

Photos by QDG Architecture.

The Challenge

Design flexible lab prototypes that respond to how students and faculty work, interact, and collaborate in a science lab environment. Specific lab designs were created for each lab type. Lab types included anatomy & physiology, astronomy & physics, biology, biotechnology, chemistry, and microbiology.

Glen Berry Role

Glen was responsible for laboratory programming, planning, and design. He met with the Los Angeles Mission College science faculty in order to understand how they work and interact with other faculty and with students. He also worked with the Architect to develop the concept plan designs for lab and lab support adjacencies.

Outcome/Innovation

Glen developed a multi-functional lab design that allows for adaptability, flexibility, and versatility over the life span of the building as pedagogy, technology, and personnel change. Biology labs are designed to function within a range of life science functions. Chemistry labs are designed to function within a range of physical science functions.

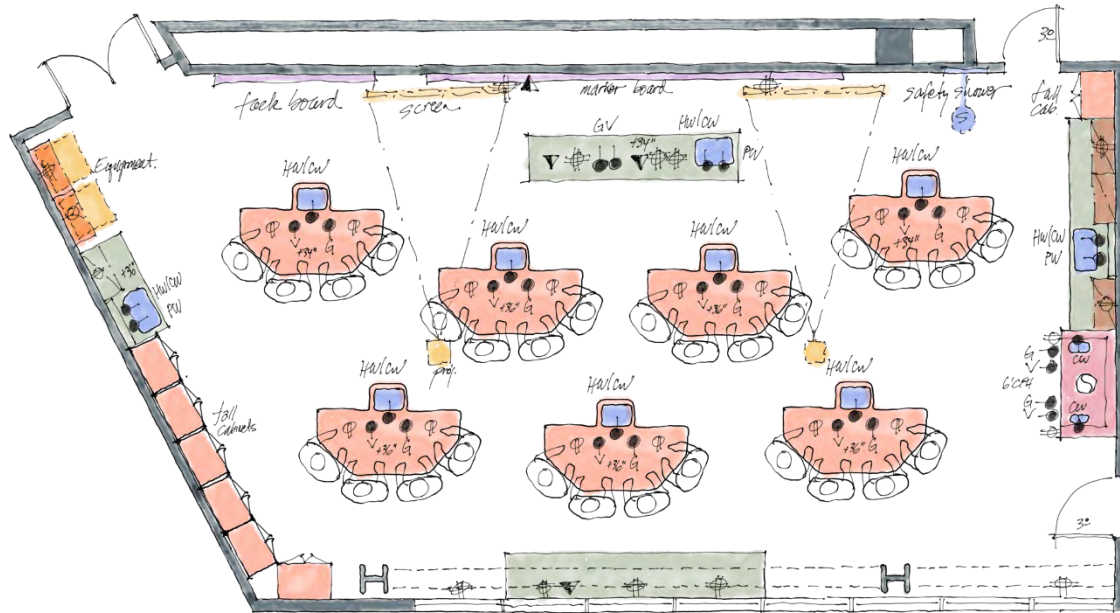
I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

- laboratory planning and design as lead lab planning consultant

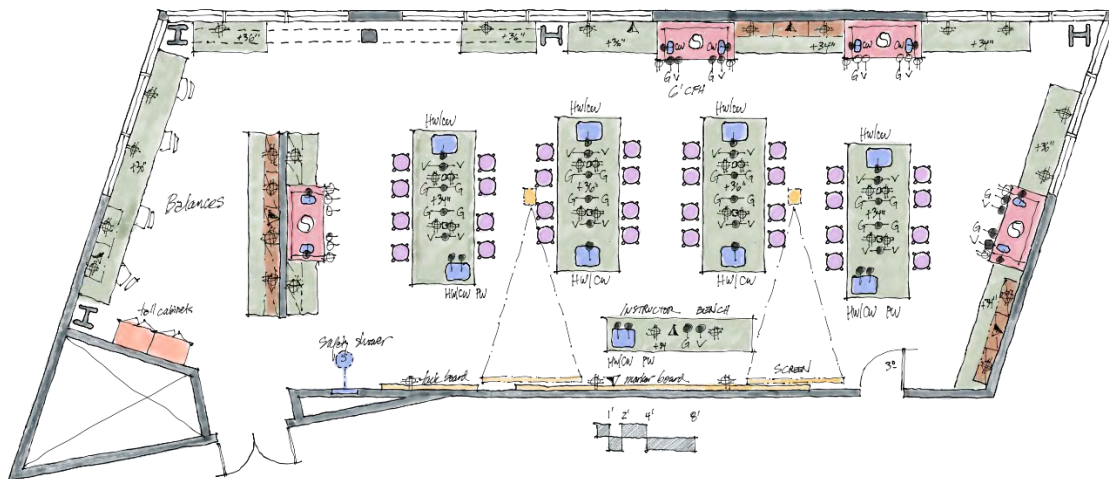
Juan Ortiz, Principal at QDG Architecture

Email: jortiz@qdg-architects.com

Principal-in-Charge for the Center for Math & Science



Biotechnology Teaching Lab design sketch ↑
Collaborative workstations provide interactive system for learning.



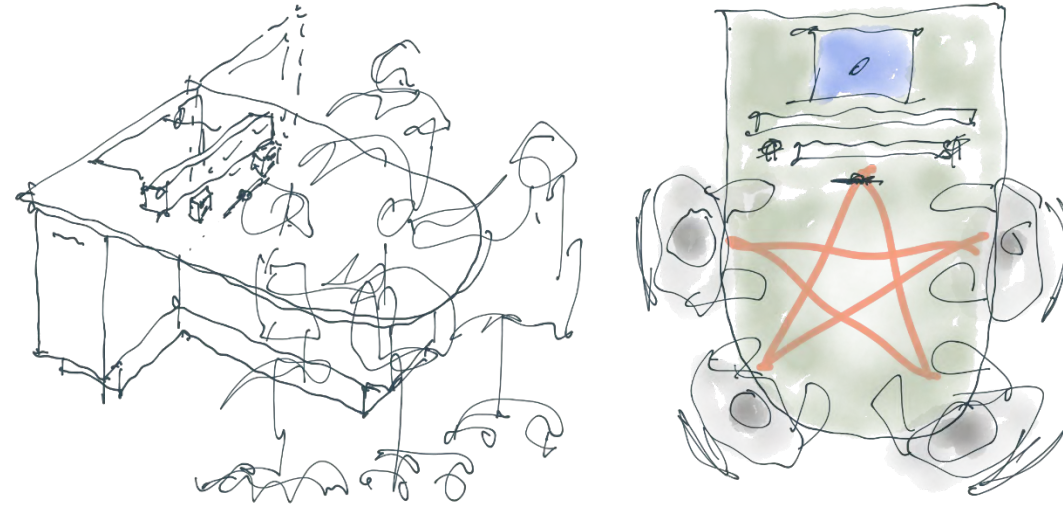
Chemistry Teaching Lab design sketch ↑
Integrated pedagogy includes balance instrument area with lab.

SECTION 3- EXHIBITS

Exhibit #6: Center for Math & Science Continued

Lab design concepts were prepared by Glen Berry, as part of a 73 page 11x17 lab design sketchbook. The Architects and Engineers used the lab design information prepared by Glen Berry to prepare construction documents for the project. Lab prototype designs were created based on science faculty needs for each science discipline- biology, chemistry, and physics. Student interaction was the primary consideration in developing the lab prototypes. The science labs function as both hands on learning environment and supplemental lecture environment.

← Concept design sketch for student island biology lab. Student collaboration determines the design of the lab workstations.



Biology lab design sketch ↓



← Built Biology Lab

SECTION 3- EXHIBITS

Exhibit #7: Life Science Building- University of Hawaii

Honolulu, Hawaii

72,000 gsf; \$50 million construction budget; Completion: 2020

Architect: G70, Honolulu, Hawaii

Lab Planner: Glen Berry, Principal, Design for Science, LLC, and Sr. Laboratory Architect, HERA Laboratory Planners (Design for Science merged with HERA in Nov 2018).

Exterior building image by G70 Architects.

Floor plan illustrations by Glen Berry.

The Challenge

To develop a mix of life science research and teaching labs that are flexible in use/application over time. The program includes graduate life science research labs for molecular and cellular biology; undergraduate instructional laboratories for biology, microbiology; electron microscope suite; and aquatics laboratory suite.

Glen Berry Role

Glen was the Principal lab planner responsible for laboratory programming, planning, and design. He met with the University of Hawaii life science faculty in order to understand how they work and interact with other faculty and with students. He also worked with the design team in developing the overall concept plan for the building.

Outcome/Innovation

Glen developed a lab design that allows for adaptability, flexibility, and versatility over the life span of the building as pedagogy, technology, and personnel change. Instructional laboratories are designed to function as both lab and lecture space. Research labs feature all adaptable/flexible casework systems except for sinks and fume hoods.

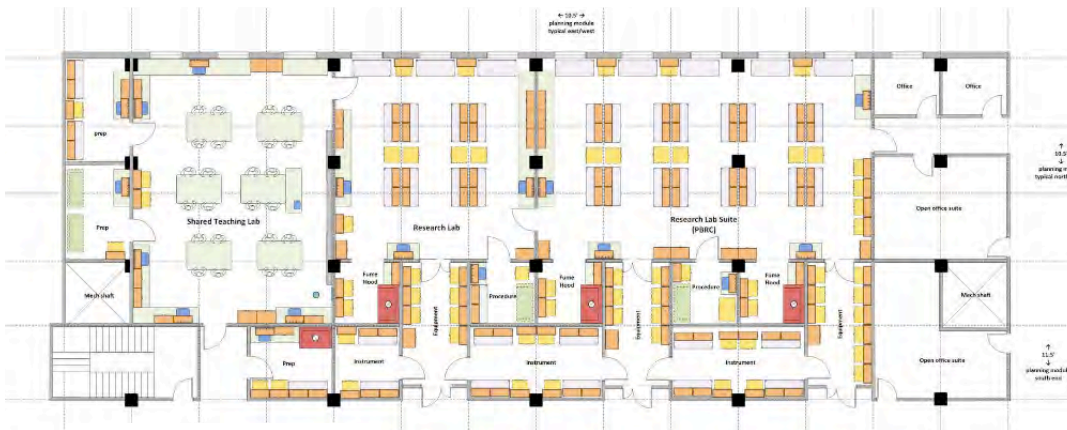
I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

- laboratory planning and design as lead lab planning consultant

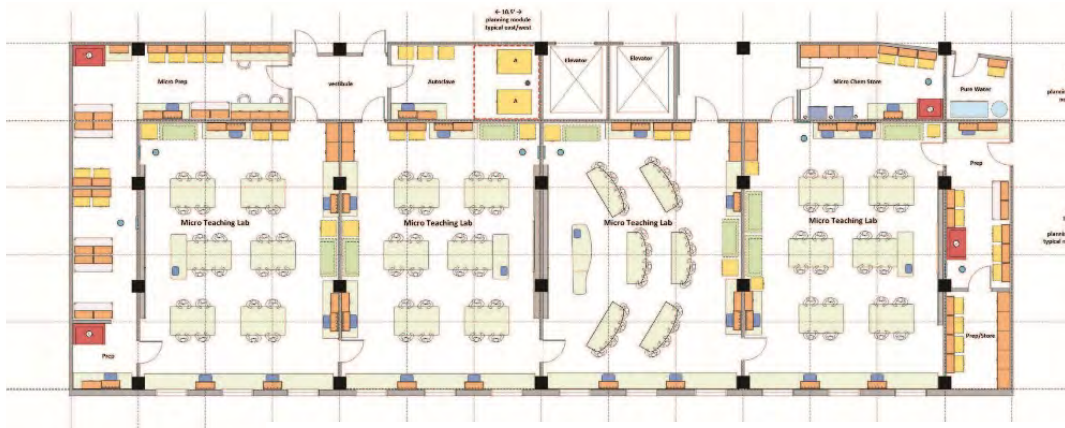
Charles Kaneshiro, AIA, President of G70

Email: charlesk@g70.design

Principal-in-Charge for Life Science Building at Univ. of Hawaii

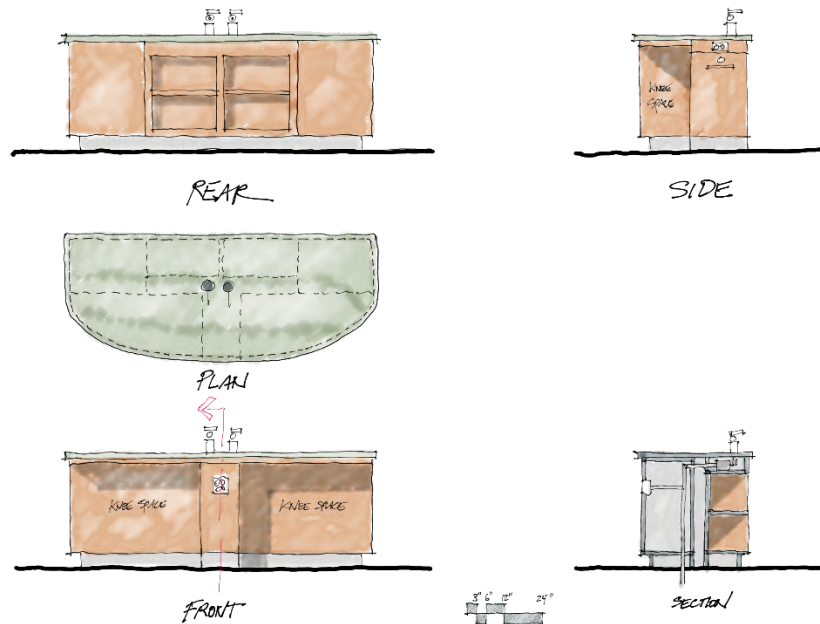


Research Lab Suite ↑



Teaching Lab Suite ↑

Undergraduate research is integral part of teaching lab wing.



Biology Teaching Lab student bench design sketch ↑



Built Biology Teaching Lab ↑

SECTION 3- EXHIBITS

Exhibit #7: Life Science Building- University of Hawaii Continued

Illustrations (including floor plan diagrams on previous page) were prepared by Glen Berry, as part of a 131 page 11x17 lab design sketchbook. The Architects and Engineers used the lab design information prepared by Glen Berry to prepare construction documents for the project. Life Science research labs are all designed with one prototype design that can adapt and change to specific research scientist needs. Flexible design aspects include moveable lab casework systems, moveable storage systems, moveable equipment systems. Instructional laboratories are designed to allow for improved movement of science faculty throughout the lab, and improved interaction between students and faculty. Photo by University of Hawaii.

Construction time lapse video:

<https://www.youtube.com/watch?v=oVG2DDy6Uw0>



Biology Teaching Lab design sketch ↑



Built Environmental Research Wet Lab ↑

SECTION 3- EXHIBITS

Exhibit #8: MESOM Laboratory- Scripps Institution of Oceanography (Marine Ecosystem Sensing, Observation, & Modeling)

La Jolla, California

39,500 gsf; \$20 million construction budget; Completion: 2013

Architect: Hacker, Portland, Oregon

Lab Planner: Glen Berry, Principal, Design for Science, LLC

LEED Platinum; 2030 Compliant

California Higher Education Sustainable Design, Honorable Mention, 2015

Photos by Rudolph & Sletten Construction

The Challenge

To develop a flexible lab prototype that can adapt over time to the constantly changing requirements of oceanography research.

Glen Berry Role

Glen was responsible for laboratory programming, planning, and design. He met with the Scripps Institution of Oceanography scientists in order to understand how they work and interact with each other and graduate students. The number one goal was to create a flexible work environment that can adapt to many research and equipment needs. The main lab is referred to as a "Workspace" which is synonymous with lab (labor = work).

Outcome/Innovation

Glen developed a lab/workspace design that allows for adaptability, flexibility, and versatility over the life span of the building as research and equipment needs change in the world of oceanography. Workspace labs were designed with natural ventilation, taking advantage of the relatively temperate climate of the southern California coast.

I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

- laboratory planning and design as lead lab planning consultant

Jonah Cohen, FAIA, Principal at Hacker (retired)

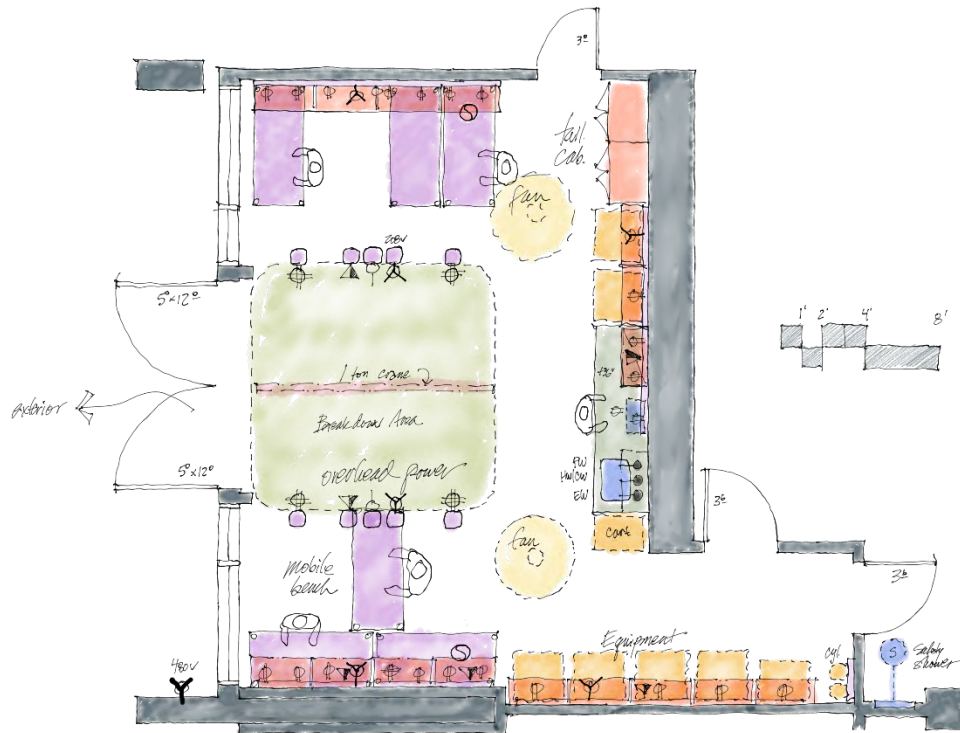
Email: jonah7752@yahoo.com

Principal-in-Charge for SIO MESOM Project

SECTION 3- EXHIBITS

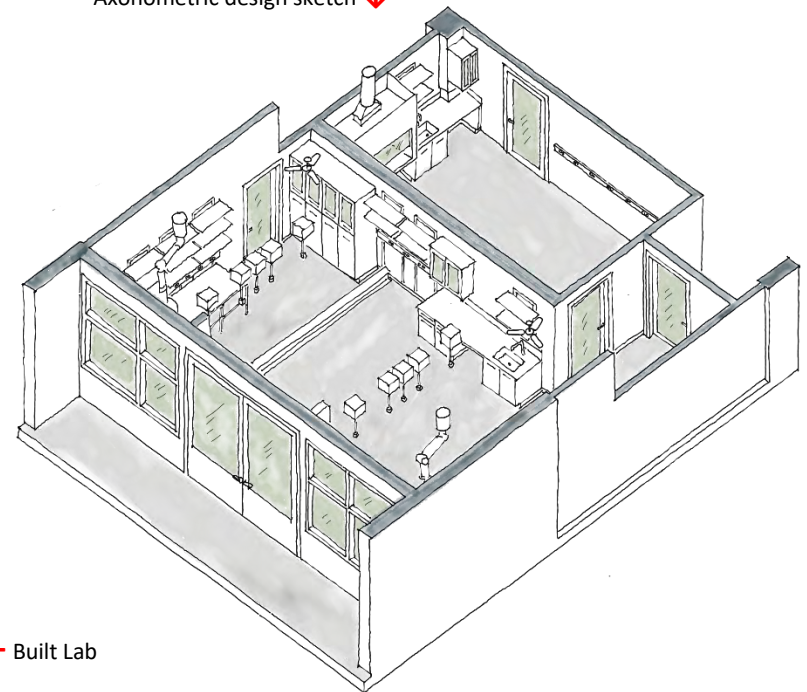
Exhibit #8: MESOM Laboratory Continued

Illustrations were prepared by Glen Berry, as part of a 36 page 11x17 lab design sketchbook. The Architects and Engineers used the lab design information prepared by Glen Berry to prepare construction documents for the project. The oceanography research work rooms were designed with many **PROTEAN** (flexible) features- large doors for access of large equipment; concrete floors designed to accept fork lift use; Overhead plug-in/plug out power/data/plumbing infrastructure; Adjustable/moveable/relocatable lab casework system. The “workrooms” were designed with natural ventilation, avoiding the common 6 air changes per hour/100% exhaust of typical lab design, which creates unnecessary energy cost and consumption. Photo by Hacker.



← Environmental Research Lab design sketch

Axonometric design sketch ↓



← Built Lab





SECTION 3- EXHIBITS

Exhibit #9: College of Engineering- Qatar University

Doha, Qatar

845,000 gsf; \$127 million construction budget; Completion: 2021

Architect: Mimar Group, Dubai, UAE

Lab Planner: Glen Berry, Principal, Design for Science, LLC

Image and drawing at left by Mimar Group

The Challenge

Develop a flexible, adaptable pattern language for six different departments within the College of Engineering: Architecture; Chemical Engineering; Civil Engineering; Computer Science; Electrical Engineering; and Mechanical Engineering.

Glen Berry Role

Principal Lab Planner representing Design for Science, LLC. Glen was responsible for laboratory programming, planning, and design. He met with the Qatar University College of Engineering faculty in order to understand how they teach and do research and interact with other faculty and with students.

Outcome/Innovation

Glen developed a common pattern language of lab components which provide flexibility within each lab type. Equipment spaces can be interchanged with lab bench space and visa versa. Fixed, built-in elements are limited to sink stations and chemical fume hoods as much as possible.

I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

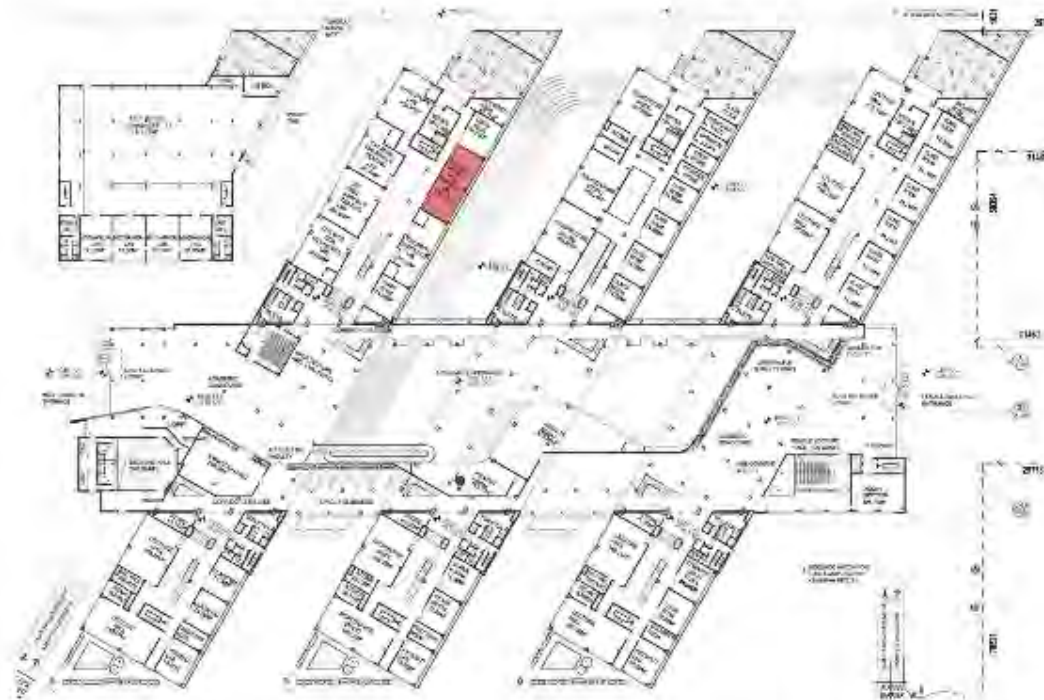
- laboratory planning and design as lead lab planning consultant

Mohammed Kamal Al Shurafa

Managing Director, Mimar Group

Email: m.kamal@mimar-group.com

Principal-in-Charge for College of Engineering at Qatar University



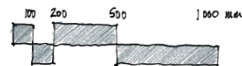
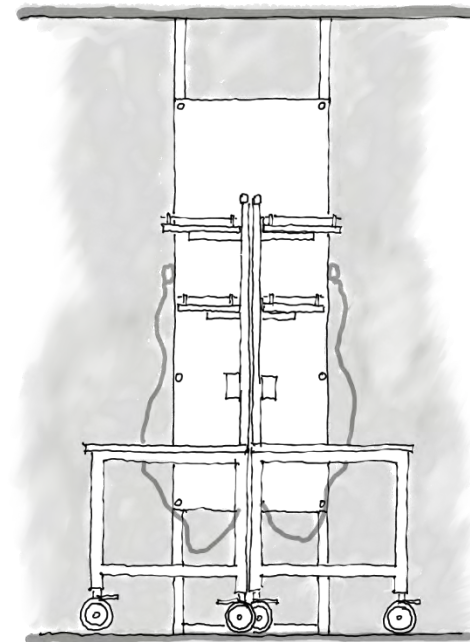
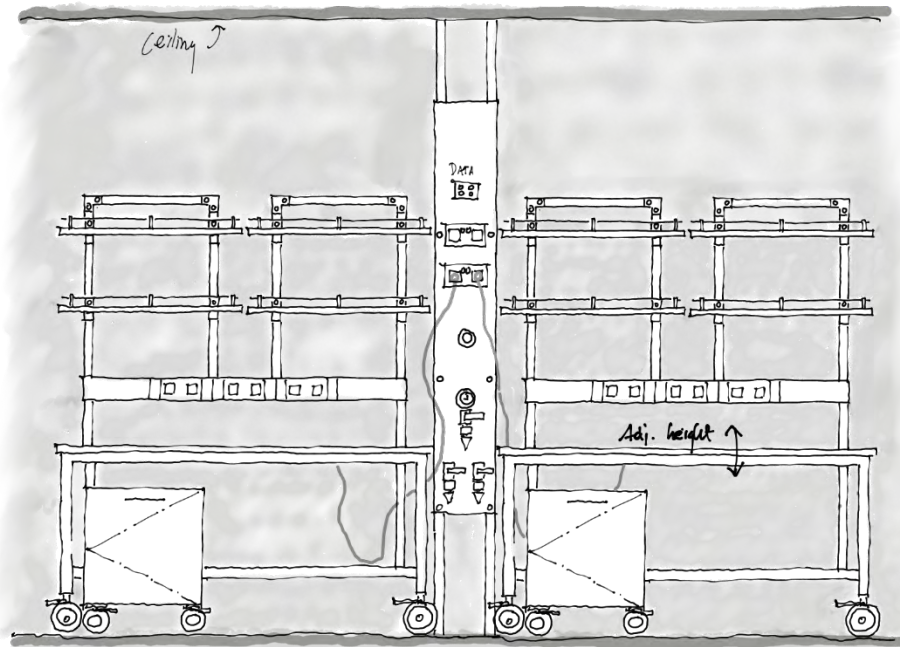
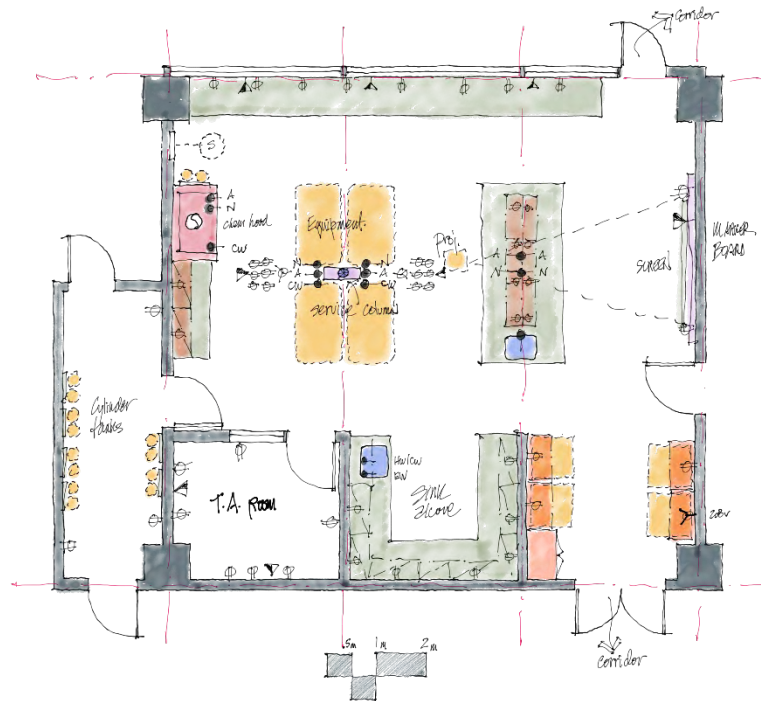
SECTION 3- EXHIBITS

Exhibit #9: College of Engineering- Qatar University Continued

Illustrations were prepared by Glen Berry, as part of a 236 page 11x17 lab design sketchbook. The Architects and Engineers used the lab design information prepared by Glen Berry to prepare construction documents for the project. The various lab types for architecture, computer science, civil engineering, chemical engineering, electrical engineering, and mechanical engineering were all design with a common grid of MEP systems distribution and lab casework patterns that allow for change. Each lab includes flexible design features, including plug-in/plug-out MEP systems and plug-in/plug-out lab furnishing systems.

← Design sketch for Chemical Engineering Lab.

↓ PROTEAN Lab bench/equipment system- highly flexible/adaptable by lab users.



SECTION 3- EXHIBITS

Exhibit #10: California Academy of Sciences

San Francisco, California

410,000 gsf; \$500 million construction budget; Completion: 2008

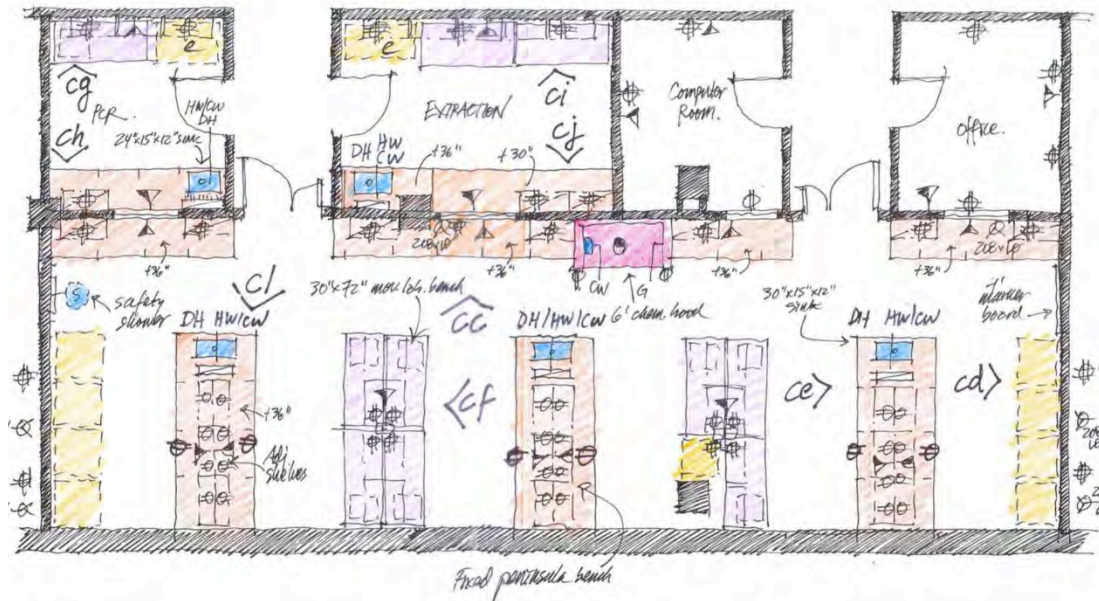
Architect: Renzo Piano Building Workshop, Genoa Italy

Gordon Chong Architects and Stantec, San Francisco, California

Lab Planner: Glen Berry, Principal, Design for Science, LLC

Largest LEED Platinum building in the world at time of construction completion

Photos by California Academy of Sciences



↑ Microbiology Research Lab original design sketch

Built lab ↓



The Challenge

The California Academy of Sciences is challenged by the mission of conserving a constantly changing world. The lab program consisted of seven scientific groups, each with their own research missions and at the same time facing the need to collaborate with other CAS scientists and scientists around the world. The seven lab groups are botany, cytology, entomology, geology, herpetology, ichthyology, and zoology.

Glen Berry Role

Glen was responsible for laboratory programming, planning, and design. He met with the CAS science staff several times in order to understand how they work and interact with other faculty and graduate students working at the Academy.

Outcome & Innovation

Glen Berry developed a common denominator of lab casework and equipment systems that can be customized for each lab group and/or investigator. Labs include flexible systems for MEP and lab furnishings.

I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included:

- laboratory planning and design as lead lab planning consultant

Howard Yao, Project Manager at Gordon Chong Architects
(Later acquired by Stantec)

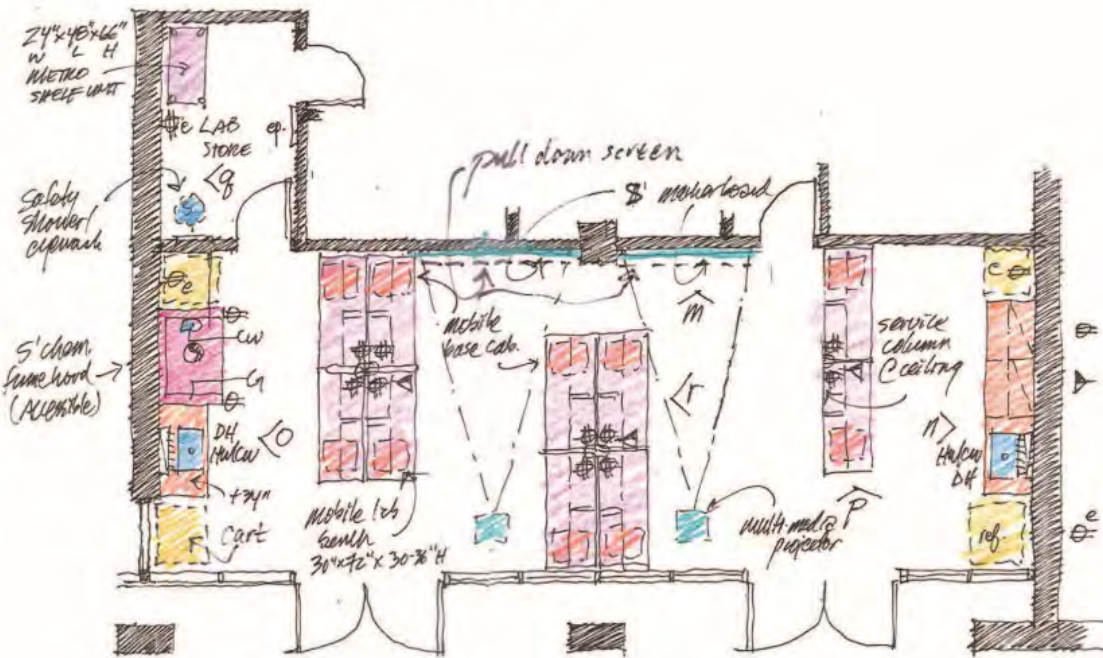
Email: hyao@are.com

Former Project Manager for CAS project

SECTION 3- EXHIBITS

Exhibit #10: California Academy of Sciences Continued

Illustrations were prepared by Glen Berry, as part of a 76 page 11x17 lab design sketchbook. The Architects and Engineers used the lab design information prepared by Glen Berry to prepare construction documents for the project. The Demonstration Lab illustrated at left and below was designed as a maximum flexibility space, with mobile furnishings, plug-in/plug-out electrical components, and audio/visual presentation capability.



← Demonstration Lab design sketch

Built Demonstration lab ↓



APPENDIX- REFERENCES

The following references are architect clients for whom Glen Berry has worked as a laboratory planning and design consultant.

2020 Application

1. Boone Hellmann, FAIA

Former Campus Architect, UC San Diego, La Jolla, California
Email: Mbharchitect@gmail.com
Projects: Natural Sciences Building
Mayer Hall Addition & Renovation
Applied Physics & Mathematics Building Renovation
SIO MESOM Laboratory

2. Sylvia Kwan, FAIA

Principal, DLR Group, San Francisco, California
Email: skwan@dlrgroup.com
Project: Science Building, Las Positas College, Livermore, CA

3. Bill Leddy, FAIA

Principal, Leddy Maytum Stacy Architects, San Francisco, California
Email: bleddy@lmsarch.com
Projects: The Bay School, San Francisco, CA
Nueva School, Hillsborough, CA
Michael J. Homer Science & Student Life Center, Sacred Heart School
Atherton, CA

4. David Neuman, FAIA

Principal, Neu Campus Planning, Inc., San Francisco, California
Email: david@neucampusplanning.com
Project: Clinical Sciences Building, Stanford University
Speaking partner at SCUP, Chicago

5. Kit Ratcliff, FAIA

Principal, Ratcliff, Emeryville, California
Email: kratcliff@ratcliffarch.com
Projects: New Science Center, St. Mary's College, Moraga, CA
Vista College, Berkeley, CA
S.T.R.E.A.M. Building, De La Salle High School, Concord, CA

6. Scott Shell, FAIA

Principal, EHDD, San Francisco, California
Email: scott.shell@ehdd.com
Projects: Global Ecology Center, Stanford
Biomedical Research Center, UC Santa Cruz
Science, Innovation, & Learning Center, Marin Academy, San Rafael, CA

7. K. Brad Van Woert, III, AIA

Principal, Van Woert Bigotti Architects, Reno, Nevada
Email: bvw@vwbarchitects.com
Projects: Computational Research Center- Desert Research Institute; Reno, Nevada
Pennington Health Science & Nursing School; University of Nevada, Reno

2021 Application

8. Charles Kaneshiro, AIA

President, CEO, G70 Design, Honolulu, Hawaii
Email: charlesk@g70.design
Project: Life Science Building, University of Hawaii

9. Kenneth Ip, HKIA

Associate, Ronald Lu & Partners, Hong Kong, China
Email: kennethcip@rlphk.com
Project: Hong Kong Science Park, Buildings 12W-A; 16E-A, 20E-A

10. Ed Daniels, AIA

Principal, Hummel Architects, Boise, Idaho
Email: edaniels@hummelarch.com
Project: Syngenta LEAF Research Center, Nampa, Idaho