



Eric Ferret's 25 years of professional experience offers proven expertise in process programming, planning, design, commissioning, validation, estimating, scheduling and budgeting of cGMP research and development, production and laboratory facilities for undergraduate and graduate academic research, institutional, public, biotech, pharmaceutical, process production, healthcare and chemical industries. He has successfully programmed and delivered millions of square feet of complex laboratory and cGMP process space for various research and production applications. His background brings unique insights to project delivery and the clients' ever-changing business and financial model. Prior to the creation of the SCI.X Science Studio, Mr. Ferret served as Director of Science + Technology at the offices of Burt Hill and KlingStubbins.

Education Pratt Institute, Architecture

Professional Affiliation ISPE, IFMA

(past)

Amgen Lab of the Future Committee

Novartis Lab of the Future Committee

Project Experience **Academic Projects**

Confidential Client, Nano-Research Facility, East Coast

Project Executive, Lead Planner / Programmer

Lead strategies to launch Nano-bio capabilities for institute and implement a P3 partnership for the direct award of the 230,000 SF, \$ 200 million Nano-bio research facility. This facility is programmed and designed for next-generation nano delivery systems of high potency compounds research. The facility consists of class 100 clean-room, BSL-2-3 labs, shared instrumentation, equipment labs, and a 9,000 SF data center . The facility was designed to create a vision of a research destination for the new fields of convergence.

The Arnold Arboretum of Harvard University, Boston, MA

Project Executive, Lead Planner / Programmer

New 76,000 SF, \$40 million BSL-3 facility for spore, seed and mold research. The facility included warm rooms, BSL-2-3 labs, cell and tissue culture, microscopy and material storage. The facility was designed to utilize geothermal wells to supply all heating/cooling requirements.

University of Notre Dame, Nanotechnology Research Facility, South Bend, IN

Project Executive, Lead Planner / Programmer

New 35,000 SF nanotechnology research facility for biometric, orthopedic devices. The facility included specialized labs for tribiology, macrophage, tissue culture, bio-materials processing, bio-materials characterization, nano-scratch indenter, chemistry, bio-prototyping and surgery. This facility contains a variety of offices, conference rooms and storage/support space. The facility program included an additional 4,000 SF for a Venture Capitalist.

SCI.X Science Studio, LLC, is a young firm with 2009 being its 1st year in business. The experience, however, of the Principals and staff goes back much farther. This is a representative selection of some of Mr. Ferret's work at S/L/A/M, EYP, KlingStubbins and Burt Hill, prior to founding SCI.X Science Studio, LLC.

ERIC R FERRET

PRINCIPAL, LEAD PLANNER / PROGRAMMER

The National Center for Bio-Defense at George Mason University, Manassas, VA

Project Executive and Lead Planner / Programmer

New 230,000 SF BSL-4 research and 65,000 SF NHP vivarium facility for the identification, testing and characterization of known, unknown and novel biological select agents and pandemics. The project included approximately 28,000 SF of BSL-3-4 labs, BSL-3-4 barrier holding, quarantine, grey-holding, necropsy, and GLP-analytical labs. All mechanical systems for the BSL-3-4 lab was designed to n+2 redundancy. The facility included a 1,000 colony of NHP procedural, behavioral, surgical, holding suites. Office sections included administration, research staff and a separate central utilities building, including a 10,000 SF Tier 3 data center.

Academic Projects

Harvard University, School of Medicine, Cardiovascular Biology Laboratory, Boston, MA

Project Executive, Lead Planner / Programmer

Renovation of 38,000 square foot of laboratory to provide next generation cardiovascular biology lab for heart disease research. The labs included bio-chemistry, molecular chemistry, micro-biology, PCR, Protein Expression, microscopy, tissue and cell culture core labs, x-ray and animal holding areas.

Harvard University, Biology Vivarium, Cambridge, MA

Project Executive, Lead Planner / Programmer

Renovation of 5,000 square foot barrier facility vivarium for approximately new 3,800 mice including new individually ventilated cages, procedural labs, perfusion areas with new MEP systems with redundancy.

Virginia Commonwealth University, Sanger Hall, Richmond, VA

Project Executive and Lead Planner / Programmer

Relocation and renovation of a new 12,000 SF gross anatomy laboratory to provide a next generation lab that allows for future expansion. The program increased the medical program from 120 to 185 students, The new facility included 28 new tanks with capacity for 34 , fresh tissue program, College of Dentistry capacity, tank decon area, hospital designed locker room, scrub area and microscopy and lab areas.

Virginia Commonwealth University, Cardio-Research, Sanger Hall, Richmond, VA

Programmer

Renovation of the 7th floor, 13,000 SF for new GLP, BSL-2 cardio tissue research laboratory for NIH research grant. These labs were VCU's first NIH funded research labs, requiring meeting NIH design standards.

Virginia Commonwealth University Animal Surgery, Richmond, VA

Programmer

Renovation of 30,000 SF vivarium and 5,000 SF large animal surgery and intensive care area to be utilized by swine, canine and NHP. The research area and suites were designed as a barrier facility with strict AAALAC design protocols and cross-contamination standards.

UMASS Medical Center, Radiology Clinical Laboratory, Worcester, MA

Lead Planner / Programmer

New 7,500 SF 3T MRI and angio suite for combined human and animal (swine) imaging and procedure for cardiovascular research. The area and suites were programmed to have human and swine utilization on varying days. Material finishes and selection, mechanical systems and decon protocols were extremely critical

Georgia Tech Research Corporation

Lead Planner / Programmer

Planning and programming for three, 150,000 sf incubator facilities. The first was programmed for nano-materials and nano-systems research and start-up firms. The facility was programmed with a robust mep infrastructure and vibration control.

Academic Projects

New York University, Brown Building, New York, NY

Project Executive and Lead Planner / Programmer

Renovations to the 3rd, 6th, and 9th floor laboratories of Brown Building at NYU. Program and design included 16,100 SF Organic Chemistry Laboratory; the 18,100 SF Molecular Design Institute and 18,100 SF Genomics Research located on the 9th floor. The advance chemistry laboratory serves as an expansion of the recently renovated shared instrument facility. The Genomics Research space includes areas for wet bench research, bioinformatics, warm room, fly room, and specialized microscopy.

New York University, Silver Building, New York, NY

Project Executive and Lead Planner / Programmer

Renovations for expansion of the Molecular Design Institute onto 7th & 8th floors of the Silver Building, comprising 46,000 SF, to house teaching curriculum and research applications including nano-biology research. The 22,000 SF of Molecular Design Chemistry included advanced wet and synthesis chemistry, instrumentation and automation areas. 3,000 SF was programmed for the NYU School of Medicine for joint applied research applications.

College of Nano-Science and Engineering, University at Albany, Albany, NY

Project Executive and Lead Planner / Programmer

Master plan study for a 50 acre campus. Study included expansion options for 5, 10 and 20 year projects, including site selection for the new Zero Energy Facility, new Wafer Prototyping / Manufacturing building with front end facility.

Medical College of Georgia, School of Medicine, Augusta, GA

Lead Planner / Programmer

New \$ 48 Million, 145,000 SF College of Medicine. The facility included teaching labs, for biology, pathology, gross anatomy, BSL-2, microscopy, lecture halls.

Emory University, Pediatrics Building, Atlanta, GA

Lead Planner / Programmer

New 96,000 SF School of Pediatrics, including clinical teaching and chemistry, biology labs, gross anatomy laboratory and vivarium research.

Georgetown University, Division of Comparative Medicine, Washington, DC

Project Executive and Lead Planner / Programmer

Grant application for the architectural and MEP upgrades to the 2,500 SF vivarium barrier housing and procedural suites. This upgrade increased the vivarium by 40%, with no disruption to the existing colony and ongoing research.

Albert Einstein College of Medicine, Bronx, NY

Project Executive, Lead Planner / Programmer

Feasibility study for the adaptive reuse of the Van Etten Building's 6th and 7th floors, each approximately 40,000 SF. Existing floors originally designed as TB wards were re-programmed to wet bio-chemistry laboratories. The study included all MEP upgrades, structural reviews as well as code and compliance issues.

Murphy & McManus, Fall River, MA

Project Executive, Lead Planner / Programmer

28,000 SF cGMP educational bio-processing facility. The facility programmed for venture capitalists to ramp-up from the GLP process to a cGMP scale-up facility, while providing hands-on education in the fields of bio-processing and pharma production in a validated cGMP facility.

ERIC R FERRET

PRINCIPAL, LEAD PLANNER / PROGRAMMER

Corporate Projects

Pfizer Inc., Groton, CT

Lead Planner / Programmer

New 20,000 SF cGMP production area for the manufacturing of high potency compounds. Program included several class 100 /1,000 suites for various equipment installations and 9,500 SF GLP, formulation, metrology and QA\QC labs.

Pfizer Global, Inc., London, On, Canada

Project Executive and Lead Planner / Programmer

70,000 SF penicillin cGMP production and warehouse facility decommission and relocation of three cGMP production lines and warehouse to a new 120,000SF cGMP facility in Lincoln, NB.

Pfizer Inc., Brooklyn, NY

Lead Planner / Programmer

25,000 SF cGMP class 100 / 1,000 process production area for scale-up production validation. Program included 9,500 SF of GLP, QA\QC, metrology, analytical labs.

Pfizer, Inc. Animal Health Production Facility, Lincoln, NB

Lead Planner / Programmer

New 120,000 SF animal health cGMP production laboratory facility for the production of penicillin, medicillin, angicillin, utilizing production equipment from MMU, IWKA and Inova. The facility included formulation, QA/QC and analytical testing labs, cGMP warehouse area; and a 5,000 SF data center.

Wyeth Laboratories, West Greenwich, RI

Lead Planner / Programmer

Renovation of 35,000 SF cGMP, class 1,000 clean room area for production of CHO cell line. Lab space included QA\QC, formulation, metrology and analytical space.

Wyeth Pharmaceutical, Pearl River, NY

Lead Planner / Programmer

20,000 SF cGMP, class 100/1,000 production suites and 40,000 SF production suites renovation. The renovation included GLP QA/QC, formulation, metrology and high potency compound labs

Wyeth Pharmaceutical, Andover, MA

Lead Planner / Programmer

New 120,000 SF cGMP, class 100/1,000 R&D production facility. Scope included commissioning and validation. The facility included approximately 35,000 SF of GLP labs, metrology, QA/QC, high potency compounding, formulation and powder fill. The facility included three process lines.

Astra Zeneca, Waltham, MA

Project Executive and Lead Planner / Programmer

New 65,000 SF \$100 Million multi-building expansion for new drug therapies research. The facility included new biology, molecular, micro, formulation and F.I.H clinical labs.

Corporate Projects

Bayer Corporation, West Haven, CT

Project Executive and Lead Planner / Programmer

22,000 SF cGMP penicillin production facility decommission and renovation; 18,000 SF GLP, R&D Hot research chemistry laboratory for therapeutics isotopes; 4,000 square foot GLP, HIV research laboratory; 14,000 SF Tier 3 data center.

Genvec Pharmaceutical, Augusta GA

Project Executive and Lead Planner / Programmer

New cGMP 125,000 SF Phase III Clinical Trials Production and warehouse facility. The facility included upstream and downstream, three production class 100 / 1,000 lines from 50L, 100L and 250 L. reactors, through UF, DF, Chromo, chelate and product fill. The process was based on mammalian cell lines. The facility included 9,600 SF GLP labs for Formulation, QA/QC, metrology and analytical chemistry.

Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT

Lead Planner / Programmer

20,000 SF GLP, REMPE expansion for cold storage (-20) of cell lines and lab samples. The expansion of the GLP to xicogenomic laboratory area for new automation.

Schering Plough Research Institute, Kenilworth, NJ

Lead Planner / Programmer

22,000 SF cGMP, class 100/1,000 R&D production suites, including 2,300 SF of cGMP formulation, high potency compounding and analytical labs.

Bristol Meyers Squibb, Wallingford, CT

Project Executive and Lead Planner / Programmer

New 2,000 SF rodent surgery suites; 2,500 SF GLP, new series of P4-P5 high potency, class 1, div 1, formulation, compound labs research laboratory expansion. 7,500 SF series of 5,000 SF NMR research laboratory suites housing 300mhz to 500mhz ultra shielded NMRs; 25,000 SF GLP, MED/ Chemistry research laboratory design and renovation; 3,000 SF, GLP class 100 / 1,000, P5 high-potency compound class 1, div 2 laboratory; 16,000 SF, GLP, SATT, formulation laboratory expansion for peptide research.

Novartis, Cambridge, MA

Project Executive, Lead Planner / Programmer

60,000 SF lab renovation and expansion for new drug therapies research. These new drug discovery labs were both GLP and non-GLP research suites. Program also included a 2,000 SF Zebra fish vivarium, 8,500 SF NMR suite with 600 MHz, 500 MHz, and 300 MHz ultra shielded units.

Norvartis Shanghai Research Center, Shanghai

Project Executive, Lead Planner / Programmer

Concept studies for modular analytical and research labs for overseas expansion. Program included 100,000 SF vivarium facility for 4 animal models.

Smith + Nephew, Andover, MA

Lead Planner / Programmer

United States corporate headquarters, programmer for Endoscopy Division including 75,000 square foot office and laboratory facilities for the training of surgeons and the development of new biomedical devices.

Regeneron, Tarrytown, NY

Project Executive and Lead Planner / Programmer

New \$120 Million, 250,000 SF laboratory buildings for Gene research and vivarium applications. Facility included 32,500 SF barrier vivaria for 3 animal models for wet age-related macular degeneration (AMD); 18,000 SF cGMP 20/50 L to 100/500 L pilot scale-up manufacturing; 95,000 SF of GLP gene research and bio-chemistry labs and; a 10,000 SF data center.

Procter & Gamble Pharmaceuticals, Norwich, NY

Project Executive and Lead Planner / Programmer

45,000 SF of cGMP Pilot plant upgrades and additions for Phase III clinical trial production. The facility included upstream and downstream processes for a genetic vector material. The process included cellular inoculum, fermentation, harvest, UF, DF, through product fill. The facility included 6,200 SF of GLP labs for formulation, high potency compounding, QA\QC and analysis.

Amgen, Cambridge, MA

Lead Planner / Programmer

Design of new \$32 million, 150,000 SF expansion including new biomedical research labs and office space. Research labs include new oncology, neuro and metabolic disorders. Core tissue and cell culture labs and wet chemistry labs were also included. This project also includes a 7,000 square foot health club.

East River Science Park, New York, NY

Project Executive and Lead Planner / Programmer

New 1,100,000 SF \$700 Million, mixed-use research, high throughput screening and chemical analytical development laboratories in New York City. Program included parking, retail, conference center, offices, and research laboratories.

"Mars Project", Confidential Client, Toronto, Canada

Project Executive and Lead Planner / Programmer

Fit-out and programming for a new 34 storey, \$800 Million, multi-tenant research facility including BSL-2-3 research laboratories, 65,000 SF 5-model barrier vivarium facility including NHPs. Other laboratory applications include incubator start-up space, chemistry, bio-chemistry, molecular design, microbiology and advanced NMR research laboratories.

REACTS/DOE, Branford, CT

Lead Planner / Programmer

30,000 SF BSL-3 research laboratory and vivarium for radioactive exposure research. The facility includes advanced GLP, bio, micro, molecular chemistry research labs and analytical testing for the chelation of isotopes.

Sanofi Aventis, Cambridge, MA

Project Executive and Lead Planner / Programmer

\$36 Million, 73,000 SF renovation of existing R&D Building for use as Genomics Research Center. This facility included GLP labs for chemistry, genomics, hydrogenation labs, bio-informatics and mass-cell lines storage.

Institutional Projects**State of Massachusetts, Department of Public Health, Jamaica Plain, MA**

Project Executive, Lead Planner / Programmer

Feasibility test fit and renovation of the 96,000 SF existing facility with expansion options for renovations, additions and new construction. To streamline lab processes, upgrade labs to BS-levels to provide analytical labs for XDR, TB and to handle first responders' unknown materials.

State of New York, Dept of Health and Mental Hygiene, New York, NY

Project Executive and Lead Planner / Programmer

Programmatic and test fit studies for relocation of New York Department of Health and Mental Hygiene into 225,000 SF of a new multi-tenant building at East River Science Project. Study included high-end containment research laboratories for various applications, BSL-3 labs, advanced research laboratories and a 14,000 SF barrier vivarium for 3 animal models. Study also included security issues, screening processes, blast analysis and core shift.

Norwalk Hospital, Norwalk, CT

Lead Planner / Programmer

Renovation of approximately 20,000 SF acute/critical response and core laboratories. Laboratory renovations included histology, pathology, blood, automation labs, cytology, and immunology; BSL-3 for XDR, TB and infectious diseases; new slide and paraffin block; and chemical storage areas.

Derby Hospital, Derby, CT

Lead Planner / Programmer

9000 SF Emergency Room renovation, including a 5000 SF expansion and 6000 SF core Blood Lab expansion.

Middlesex Hospital, Middletown, CT

Lead Planner / Programmer

30,000 SF ambulatory expansion. Day surgery and core lab expansion.

UMASS Medical Center, Radiology Clinical Laboratory, Worcester, MA

Lead Planner / Programmer

New 7,500 SF 3T MRI and angio suite for combined human and animal (swine) imaging and procedure for cardiovascular research. The area and suites were programmed to have human and swine utilization on varying days. Material finishes and selection, mechanical systems and decon protocols were extremely critical

North Adams Regional Hospital Operating Room Renovation, North Adams, MA

Lead Planner / Programmer

Planning, programming, design and construction admin of the renovation of an active 3500 sf operating room area. Eight functional OR were renovated in a phased construction method in which 4 OR's were keep fully functional at all times. The OR's functional ranges from ortho, cardio and general. Surgical storage, nursing area and surgical staff prep were also renovated. During the project the OR area met all required conditions and guidelines to ensure patient and staff safety. The second phase of the project was the main cafeteria area and access corridor this as also preformed as a phased construction method to allow the cafeteria to remain functional at all times.