# VIBRASURE

Vibrasure Consulting Engineers, Inc. | www.vibrasure.com | 415-946-8487

**HISTORY**

Vibrasure was started by Byron Davis, bringing almost 20 years of experience in vibration and acoustical design. Our background is in high-tech settings, where micro-vibration and noise are key to occupants' successes.

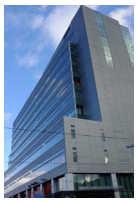
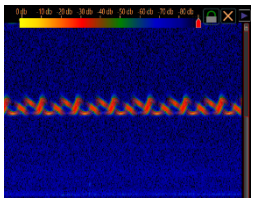
***We provide vibration and acoustical consulting in critical environments.***

**INDUSTRIES SERVED**

**Academic and R&D laboratories**, including high-end imaging suites
**Semiconductor fabs**, from site selection to tool installation and retrofits
**Medical centers**, with noise/vibration-sensitive imaging and patient areas
**Animal facilities** where noise and vibration interfere with active research
**Transportation**, especially for systems in proximity to sensitive uses
**Commercial offices** and other human-oriented environments
**Institutional settings** where campus-wide impact planning is important

**CAPABILITIES**

**Micro-vibration and noise testing** and analyses for assessment/compliance
**Field vibration propagation** testing and experimental characterization
**Dynamic properties extraction** to support FEA and model generation
**M/E/P system optimization** and machine vibration isolation specifications
**Interior acoustical design** for human, animal, and instrument performance
**Instrumented monitoring** of environmental and construction-impact data
**Campus-scale** planning, troubleshooting, mitigation program development
**Third party reviews** of acoustical and vibration designs


**RECENT PROJECTS**

**Bryan Hall (WUSTL/Chemistry):** vibration design for a university laboratory renovation, including a structural upgrade and mitigation of MEP vibration

**K302 (Ely Lilly):** vibration and acoustical design consulting for a new 130,000gsf small molecule research and development laboratory building

**Block 23A, Block 33, ZSFG (UCSF):** technical performance criteria & planning for multiple hospital, clinical, laboratory, office, and housing projects.

**Tech Institute Infills (Northwestern):** vibration and acoustical design for multiple infill lab projects, including nanoscale imaging core facilities

# SAMPLE PROJECTS

*Representative projects led or executed by Vibrasure staff (some projects completed under other firms)*

## HIGH-TECH, R&D

**PHYSICAL SCIENCES FACILITY**
PACIFIC NORTHWEST NATIONAL LAB, RICHLAND
Vibration and acoustical design consulting for a five-building nuclear materials research center.

**FAB 323A, VARIOUS STUDIES**
IBM, FISHKILL
Multiple vibration and acoustical studies supporting tool move-in, fab expansions, troubleshooting.

**ANIMAL CARE AND RESEARCH FACILITY**
UNIVERSITY OF WASHINGTON, SEATTLE
Acoustical, vibration, and construction vibration consulting for a $123M underground vivarium.

## HEALTHCARE

**PRECISION CANCER MEDICINE BUILDING**
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
Vibration and acoustical design for a state-of-the-art $275M cancer building at UCSF Mission Bay.

**SUTTER SACRAMENTO MEDICAL CAMPUS**
SACRAMENTO, CA
Vibration and acoustical design for an $800M expansion of the midtown campus.

## INFRASTRUCTURE

**BIOSOLIDS DIGESTER FACILITIES PROJECT**
SAN FRANCISCO PUBLIC UTILITIES COMMISSION, SAN FRANCISCO
Neighborhood-wide computer noise modeling for a $350M upgrade to Southeast Plant.

**SOUND TRANSIT LIGHT RAIL VIBRATION / EMI IMPACTS**
UNIVERSITY OF WASHINGTON, SEATTLE
Evaluations and reviews of impacts from a planned light rail alignment crossing campus.

## RESIDENTIAL & COMMERCIAL

**NEW CLASS A OFFICE BUILDING**
CONFIDENTIAL CLIENT, WISCONSIN
Acoustical design for a 7-story office building, including multiple meeting rooms and multi-use spaces.

**UNIVERSITY SQUARE TENANT IMPROVEMENT**
CONFIDENTIAL CLIENT, EAST PALO ALTO
Acoustical design for a 4-story class A office space featuring a unique atrium design.

**TRANSBAY BLOCKS 6 & 7**
SAN FRANCISCO
Acoustical design for market-rate and affordable housing, including both Type I and V construction.

## ENVIRONMENTAL

**PENINSULA PIPELINES SEISMIC UPGRADE**
SAN FRANCISCO PUBLIC UTILITIES COMMISSION, SAN FRANCISCO
EIR noise chapter for reliability upgrades to existing pipeline running through multiple jurisdictions.

**CALIFORNIA HIGH-SPEED RAIL**
MULTIPLE SEGMENTS, STATEWIDE
EMI/RF and vibration input to EIR chapters for multiple segments of the high-speed rail program.

# BYRON DAVIS

Vibrasure Consulting Engineers, Inc. | byron@vibrasure.com | 415-946-8487

## BACKGROUND

As founding principal of Vibrasure, Mr. Davis leads projects requiring detailed vibration and noise analyses; theoretical modeling and experimental determination of propagation parameters; field measurement and extraction of difficult-to-obtain physical quantities; and facilities design and construction details for micro-vibration and acoustical / noise control.

He is a 1998 graduate of the Department of Materials Science and Engineering at MIT. During his time at MIT, he held various positions at Panasonic, Lucent, and Bose. Later, he worked in the metrology division at Applied Materials. His direct experience as a user of high end imaging and metrology tools in laboratory and cleanroom environments provides him with a unique consulting perspective in the delivery of low-vibration facilities, including laboratories and semiconductor fabs.

## EXPERIENCE

**FOUNDER / PRINCIPAL** VIBRASURE ESTABLISHED 2015
Mr. Davis continues to serve clients working at the micro/nanoscale in critical environments. As of 2017, current active projects include a structural retrofit to an existing university research laboratory building; acoustical and vibration design for a new 130,000gsf pharmaceutical research laboratory; and campus-wide consulting for a university affected by a regional light rail system.

**VICE-PRESIDENT / ASSOCIATE** VIBRO-ACOUSTIC CONSULTANTS 2001 – 2015
Associate at a small consultancy centered on high-end semiconductor and laboratory settings. As the business matured, he helped build a construction vibration/noise monitoring practice within the firm. Later, he developed a unique custom instrumentation suite.

**MEMBER, TECHNICAL STAFF** APPLIED MATERIALS 2000 – 2001
Worked with wafer inspection tools from two Israeli vendors recently purchased by AMAT. One tool relied on dark-field optical inspection, while the other involved high-throughput SEM imaging.

**JUNIOR CONSULTANT** COLIN GORDON & ASSOCIATES 1998 – 2000
Introduced to the vibration / acoustical consulting business by a leading firm in the industry.

## EDUCATION

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY**, CAMBRIDGE
BS, MATERIALS SCIENCE AND ENGINEERING

Specialty in semiconductor processing. Thesis: Laser-Based Direct Write Patterning for Thick-Film Plasma Display Panels (executed at Panasonic Technologies)

**PENNSYLVANIA STATE UNIVERSITY**, STATE COLLEGE
GRADUATE PROGRAM IN ACOUSTICS (COURSEWORK ONLY)

Participated in distance-education masters-level coursework in acoustics and vibration. Coursework included Acoustics I and II; Digital Signal Processing; Acoustical Data Measurement and Analysis; Outdoor Sound Propagation; and Architectural Acoustics

## ASSOCIATIONS

Institute for Environmental Science and Technology (IEST), sitting on WG-CC-NANO207
Acoustical Society of America (ASA) and Institute for Noise Control Engineering (INCE)
ASA Technical Committee on Architectural Acoustics (TCAA)
ANSI / ASA Working Group on Noise and Vibration in Animal Facilities (S3/SC1 WG05)
American Association for Laboratory Animal Science (AALAS)

# TYLER RYNBERG, PE

Vibrasure Consulting Engineers, Inc. | tyler@vibrasure.com | 415-946-8487

## BACKGROUND

Joining the Vibrasure team with nearly 20 years in the industry, Tyler Rynberg has extensive experience managing a variety of projects in mechanical noise and vibration control, architectural acoustics, environmental noise, construction noise and vibration monitoring, and building vibration testing and design.

During his career, Tyler has worked on a broad range of building types and market sectors, including science and research facilities, medical centers, mixed-use, office spaces, movie and performance theatres, industrial/manufacturing facilities, and multi-family residential. Along with design work, Tyler has planned and conducted measurements of airborne and structural-borne noise transfer, micro-vibration, environmental/transportation noise, room acoustic metrics, and noise exposure (OSHA workplace noise).

He is a 1997 graduate of the Department of Interdisciplinary Engineering at Purdue University. His experience working on a wide array of projects from electron microscopy suites to luxury high-rise towers to medical facilities with all forms of project delivery, including fast-track/IPD, provides him with an expansive toolset in solving design challenges.

## EXPERIENCE

**SENIOR CONSULTANT** VIBRASURE 2017
Mr. Rynberg continues to serve clients in all market sectors, including healthcare, residential, commercial, infrastructure, and environmental.

**PROJECT MANAGER / ASSOCIATE** STANTEC CONSULTING 2016 – 2017
Opened San Francisco acoustical office, expanding acoustical services into California and other markets, and managed large projects in healthcare and commercial sectors.

**SENIOR ASSOCIATE** VIBRO-ACOUSTIC CONSULTANTS 2009 – 2016
Managed large projects in all sectors and increased market presence in residential, infrastructure, and construction markets.

**SENIOR CONSULTANT** THORBURN ASSOCIATES 1998 – 2008
Led acoustical side of multi-disciplinary firm. Helped to develop acoustic testing and analysis methodologies.

## LICENSEING

**PROFESSIONAL ACOUSTICAL ENGINEER**
STATE OF OREGON, 2006

## EDUCATION

**PURDUE UNIVERSITY**, WEST LAFAYETTE, IN
BS, GENERAL ENGINEERING

Specialty in acoustical engineering

## ASSOCIATIONS

Acoustical Society of America (ASA)
Institute for Noise Control Engineering (INCE)
ASA Technical Committee on Architectural Acoustics (TCAA)

# JOHN M FINI, PH.D

Vibrasure Consulting Engineers, Inc. | fini@vibrasure.com

**BACKGROUND**

John is a generalist and expert on modeling and numerical methods and provides consulting support services to Vibrasure. His approach combines quantitative rigor of his training in quantum noise and stochastic systems, a playful curiosity for solving diverse problems, and pragmatic sense for delivering customer value. At home in Matlab and Python, he nimbly picks up whatever languages and software are best suited to analyze a problem and to connect with his audience.

He received BS, MEng, and PhD from MIT, focusing on electromagnetics, signal processing and random processes, but also studying broadly, from bioengineering and neuroscience to microelectronic fabrication. For twelve years, he was the one-man advanced optical fiber design team for a former-Bell-Labs research lab. In collaboration with Honeywell, DESY, and others, he proposed and prototyped fiber designs for breakthrough precision in navigational sensors, femtosecond timing distribution in synchrotrons, and high-power laser applications.

**EXPERIENCE**

**DATA SCIENTIST** VIBRASURE
ESTABLISHED 2015
Developing signal processing and data analysis tools.

**PRINCIPAL ENGINEER** AYAR LABS
2016~PRESENT
Exploring Ayar's powerful silicon photonics platform and designing devices to harness light on a chip.

**PRINCIPAL ENGINEER** LUMENTUM (FORMERLY JDSU)
2014~PRESENT
Developing of high-speed receivers for optical communications. Performed Monte Carlo simulation of transmission using advanced modulation formats. Designed indium-phosphide photodetectors for improved reliability. Lead on photodiode qualification: planning of accelerated aging, sampling, test setup and statistical modeling.

**DISTINGUISHED MEMBER OF TECHNICAL STAFF** OFS LABORATORIES
2002~2014
Developed custom modeling codes including physics-based simulations: Modes, coupling and scattering of waves. Monte Carlo simulations of random coupling. Invented novel designs for breakthrough performance: Proposed broad new strategies for diverse applications, from the ultimate fiber-optic gyroscope to high-powered lasers, telecom amplifiers and synchrotrons. Carried many design types from concept to prototype. Designed and developed EZBend™, a successful commercial product. My bend-resistant design enables low-cost installation of fiber to the home.

**DESIGNER** CORLUX
2001~2002
Designed modulators and lasers at a telecom component startup.

**EDUCATION**

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY**, CAMBRIDGE
BS, M.ENG, ELECTRICAL ENGINEERING AND COMPUTER SCIENCE
PHD, ELECTRICAL ENGINEERING
Thesis on quantum optical noise; estimation and compensation of polarization impairments.

**ASSOCIATIONS**

IEEE Photonics Society Member; Optical Society of America Senior Member

# TEXT FOR TEAM PACKAGES

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We are eager to **help you win projects** for which vibration and acoustical considerations are of high importance. This sheet provides some standard "teaming text" of different word-counts to assist your business-development team. Custom text and image files of logos, headshots, and other items are available upon request.

***Two-sentence version (38 words, one paragraph):***

Vibrasure is a full-service vibration and acoustical consultancy providing design and testing solutions for advanced-technology facilities. Our staff have worked for nearly 20 years in critical environments where vibration and noise control is key to Users' successes.

***Short Quarter-page version (103 words, two paragraphs):***

Vibrasure was started by Byron Davis, bringing almost 20 years' experience in vibration and acoustical design. Our characterization and design background is in high-tech settings, where vibration and noise interference can undermine occupants' successes. We provide engineering consulting in critical environments.

Our staff have helped deliver high-quality environments for academic, national, and corporate R+D laboratories; semiconductor fabs; and vivaria. We also provide solutions for office and other human spaces associated with those research facilities. In addition to design consulting, our testing and monitoring capabilities have been deployed on projects ranging from nanotech labs to animal facilities to transit systems to heavy construction projects.

***Long Quarter-page version (135 words, two paragraphs):***

Vibrasure was started by Byron Davis, bringing almost 20 years' experience in vibration and acoustical design. Our characterization and design background is in high-tech settings, where vibration and noise interference can undermine occupants' successes. We provide engineering consulting in critical environments.

Our services span the entire delivery cycle for advanced-technology facilities, from planning and site selection through design and construction / commissioning. Our staff have helped deliver high-quality environments for academic, national, and corporate R+D laboratories; semiconductor fabs; and vivaria. We also provide solutions for office and other human spaces associated with those research facilities. We can help with design as well as detailed testing and monitoring, from individual tools to buildings to entire campuses. Our staff have worked on facilities with billions of dollars in construction value across North America and around the world.

***Half-page version (308 words, four paragraphs):***

Vibrasure was started by Byron Davis, bringing almost 20 years' experience in vibration and acoustical design. Our characterization and design background is in high-tech settings, where vibration and noise interference can undermine occupants' successes. We provide engineering consulting in critical environments.

Due to our unique resumes, not only do we have experience in designing facilities for highly-sensitive work; we have academic and professional experience as users of those facilities, as well. Therefore, we have a deep understanding of how and why those functions can be affected by "energetic contaminants" like vibration and sound, and we can think outside of the box when it comes to unique uses for which precise sensitivities are unknown.

Our services span the entire delivery cycle for advanced-technology facilities, from planning and site selection through design and construction / commissioning. In addition to addressing high-tech environments on these projects, we also provide solutions for office and other human-oriented spaces associated with the research facilities. We can help with design as well as detailed testing and monitoring, from individual tools to buildings to entire campuses. Our staff have worked in high-quality environments for academic, national, and corporate R+D laboratories; semiconductor fabs; and vivaria. We have helped deliver facilities for human, instrumentation, and animal occupants with billions of dollars in construction value across North America and around the world.

Example projects in our consultants' portfolios include acoustical and vibration design for a new 130,000gsf pharmaceutical research laboratory, with challenging open-plan concepts for both the offices and labs; a structural retrofit to an existing university laboratory that provided 8,000gsf of high-quality VC-C lab space on an upper floor; campus-scale testing and consultations regarding light-rail projects being constructed in close proximity to academic laboratories; acoustical design for upgrades to a behavioral testing suite in a primate research facility; and testing and consulting services for multiple semiconductor processing fabs.