

MICHAEL LEE GENDREAU
President
Colin Gordon Associates

Michael Gendreau has been with Colin Gordon Associates since June 1993, in the position of Senior Consultant and Project Manager for most of this time. He specializes in facility interior vibration and noise control (including the analysis of HVAC and building mechanical systems); infrasound impact studies; structural dynamic testing; machinery vibration isolation; room acoustics; environmental noise studies using computer models; and site studies, including the measurement of environmental vibration and noise, interpretation of local noise regulations and building noise and vibration design criteria; and preparation of environmental impact and design feasibility reports. In addition to his technical work, Michael Gendreau is the primary project manager at Colin Gordon Associates.

Prior to joining Colin Gordon Associates, Michael Gendreau was employed for three years as a vibration engineer with Response Dynamics of Oakland, California. In this capacity, he conducted vibration, EMI, and acoustic site surveys and maintained continuous monitoring installations in the microelectronics and biomedical industries. In addition, he performed finite element analysis and model testing of machinery.

EDUCATION

- M.A. Mills College, Oakland**
Composition (Electronic Music and Recording Media), 1992
- B.A. University of California, Santa Cruz**
Physics, 1989

CERTIFICATES

- Vibration and Noise Control: New Insights and Developments
(Instructors: Eric Ungar and James Moore), Applied Technology Institute
- Noise Control for Buildings and Manufacturing Plants Lecture Series
(Instructors Robert Hoover, Reginald Keith, Laymon Miller), Hoover & Keith Inc.,

REGISTRATION AND PROFESSIONAL SOCIETIES

- Board Certified Member, Institute of Noise Control Engineering (INCE)
Member, Society for Experimental Mechanics (SEM)
Member, Acoustical Society of America (ASA)
Member, Audio Engineering Society (AES)
Member, Institute of Environmental Sciences and Technology (IEST)
Member, National Society of Professional Engineers (NSPE)
Member, National Council of Acoustical Consultants (NCAC)
Member, International Institute of Acoustics and Vibration (IIAV)
Member, International Society for Optical Engineering (SPIE)

PROFESSIONAL ACTIVITIES

- Member, Working Group 36 (Fan Filter Units), Institute of Environmental Sciences and Technology (IEST)
- Session Chair, Optomechanical Engineering and Vibration Control, Transducers and Data Processing, International Society for Optical Engineering (SPIE), Denver, CO July 1999
- Session Chair, Buildings for Advanced Technology Workshop (BAT I), EMI, National Institute of Standards and Technology (NIST), Gaithersburg, MD, January 2003
- Session Chair and Program Committee, Buildings for Nanoscale Research and Beyond, International Society for Optical Engineering (SPIE), San Diego, CA July 2005
- Session Chair, 2nd International Symposium on Environmental Vibrations, Topics 10 and 11 (Building Vibrations by Traffic and Other Sources, and Assessment of Environmental Vibration for Living Condition), Okayama University, Okayama, Japan, 22 September 2005

EMPLOYMENT EXPERIENCE

- 1993-Present Senior Consulting Engineer and Primary Project Manager (since July 1997), Senior Vice President (2001), President (2002), *Colin Gordon Associates*, Brisbane, CA.
- 1990-1993 Consultant, *Response Dynamics*, Oakland, CA.
- 1989-1990 Tutor in Mathematics and Physics, *Mills College*, Oakland, CA.
- 1990-1991 Equipment Manager and Principal Sound Engineer, *Mills College Center for Contemporary Music*, Oakland, CA.
- 1987-1988 Reader in Physics, *University of California*, Santa Cruz, CA.

CONFERENCES

IMAC XXVII, Conference and Exposition on Structural Dynamics, Orlando FL, USA, 9 to 12 February 2009

Acoustics 08 Paris, Palais des Congres, Paris, France, 29 June to 4 July, 2008

AIA Convention 2006, Los Angeles California, 8-10 June, 2006

ICSV11, Eleventh International Congress on Sound and Vibration, St. Petersburg, Russia, 5-8 July 2004

ESTECH 2004, 50th Annual Technical Meeting, Institute of Environmental Sciences and Technology (IEST), Las Vegas, Nevada, 25-28 April 2004

11th ICSDEE & 3rd ICEGE, The 11th International Conference on Soil Dynamics and Earthquake Engineering & The 3rd International Conference on Earthquake Geotechnical Engineering, University of California, Berkeley, CA, 7-9 January 2004

Scandinavian Vibration Society (SVIB) Machine Vibrations 2003, Norges Geotekniske Institutt (NGI), Oslo, Norway, 26 November 2003

BAT 1, Buildings for Advanced Technology, Gaithersburg, MD, 14-16 January 2003

Construction Congress VI, American Society of Civil Engineers (ASCE), Orlando, Florida, 20-22 February, 2000

Inter-Noise 99, The 1999 International Congress on Noise Control Engineering, Ft Lauderdale, FL, 6-8 December 1999

SPIE 1999 Denver, Optomechanical Engineering and Vibration Control, Denver, CO, 20-23 July 1999

Noise-Con 96, The 1996 National Conference on Noise Control Engineering, Bellevue, WA, 29 September - 2 October 1996

Inter-Noise 95, The 1995 International Congress on Noise Control Engineering, Newport Beach, CA, 10-12 July 1995

PAPERS, PRESENTATIONS, AND OTHER PUBLICATIONS

Books

M. Gendreau and H. Amick, *Semiconductor Manufacturing Handbook Chapter 39 Micro-Vibration and Noise Design*, ed. H. Geng, McGraw-Hill, 2005

H. Amick, **M. Gendreau**, and N. Wongprasert, "Centile Spectra, Measurement Times, and Statistics of Ground Vibration," in *Environmental Vibrations: Prediction, Monitoring, and Evaluation (ISEV2005)*, ed. H. Takemiya, Taylor & Francis, 2005

Peer Reviewed Journals

M. Gendreau and H. Amick, "'Maturation' of the Vibration and Noise Environments in Semiconductor Production Facilities," *Journal of the Institute of Environmental Sciences and Technology (JIEST)*, 2005

Conference Proceedings

M. Gendreau, "The Effect of Varying Acoustic Pressure on Vibration Isolation Platforms Supported on Air Springs," *Proceedings of the 16th International Congress on Sound and Vibration (ICSV16)*, Kraków, Poland (5 to 9 July 2009)

M. Gendreau, "Measurement Techniques used to Verify the Cause and Nature of Low-frequency Noise in Rooms," *Proceedings of the 16th International Congress on Sound and Vibration (ICSV16)*, Kraków, Poland (5 to 9 July 2009)

M. Gendreau, N. Tang, H. Amick, C. Wu, "Mode Selection for Footfall Analysis of Floors," *Proceedings of IMAC XXVII Conference and Exposition on Structural Dynamics*, Orlando FL, USA (9 to 12 February 2009)

M. Gendreau, "Generic Noise Criterion Curves for Sensitive Equipment," Invited Presentation, *Proceedings of Acoustics 08 Paris*, Paris, France (29 June to 4 July 2008)

B. Xiong, H. Amick, and **M. Gendreau**, "The Effect of Buildings on Ground Vibration Propagation," *Proceedings of National Conference on Noise Control Engineering (Noise-Con 2007)*, Reno NV, USA (22 October 2007)

H. Amick, **M. Gendreau**, and N. Wongprasert, "Centile Spectra, Measurement Times, and other Statistics of Ambient Ground Vibration," *Proceedings of the Second International Symposium on Environmental Vibrations: Prediction, Monitoring, Mitigation and Evaluation (ISEV2005)*, Okayama University, Okayama, Japan (20 to 22 September 2005), pp. 547-552

H. Amick and **M. Gendreau**, "Evolving Criteria for Research Facilities I: Vibration," *Proceedings of the International Society for Optical Engineering (SPIE)*, San Diego CA, USA (July 2005)

T. Busch, **M. Gendreau**, and H. Amick, "Vibration and Noise Criteria used to Evaluate Environmental Impacts of Transportation Sensitive Facilities," *Proceedings of the International Society for Optical Engineering (SPIE)*, San Diego CA, USA (July 2005)

M. Gendreau, "Noise in Cleanrooms Served by Fan-Filter Units: Design Considerations," *Proceedings of the 11th International Congress on Sound and Vibration (ICSV11)*, St. Petersburg, Russia (5 to 8 July 2004), pp. 2461-2468

M. Gendreau and H. Amick, "'Maturation' of the Vibration and Noise Environments in Semiconductor Production Facilities," *Proceedings of ESTECH 2004, 50th Annual Technical Meeting, Institute of Environmental Sciences and Technology (IEST)*, Las Vegas NV, USA (28 April 2004)

H. Amick, T. Xu, and **M. Gendreau**, "The Role of Buildings and Slabs-on-Grade in the Suppression of Low-Amplitude Ambient Ground Vibrations," *Proceedings of the 11th International Conference on Soil Dynamics and Earthquake Engineering (11th ICSDEE) & the 3rd International Conference on Earthquake Geotechnical Engineering (3rd ICEGE)*, Berkeley CA, USA (7 to 9 January 2004). pp. 877-881

M. Gendreau, H. Amick and T. Xu, "The Effects of Ground Vibrations on Nanotechnology Research Facilities," *Proceedings of the 11th International Conference on Soil Dynamics and Earthquake Engineering (11th ICSDEE) & the 3rd International Conference on Earthquake Geotechnical Engineering (3rd ICEGE)*, Berkeley CA, USA (7 to 9 January 2004), pp. 905-910

T. Xu, H. Amick, and **M. Gendreau**, "Vibration Design of 300 mm Wafer Fabs," *Proceedings of SEMI Technology Symposium (STS)*, SEMICON China 2003, Shanghai, China, (12 to 14 March 2003), pp. 32-39

H. Amick, **M. Gendreau**, and C. G. Gordon, "Facility Vibration Issues for Nanotechnology Research," *Proceedings of the Symposium on Nano Device Technology 2002*, National Chiao-Tung University, Hsinchu, Taiwan (2 to 3 May 2002), pp. 107-110

H. Amick and **M. Gendreau**, "Construction Vibrations and Their Impact on Vibration-Sensitive Facilities," *Proceedings of the Sixth Construction Congress*, American Society of Civil Engineers (ASCE), Orlando FL, USA, (February 2000), pp. 758-767

M. Gendreau and M. Wu, "Environmental Noise Control for Semiconductor Manufacturing Facilities," *Proceedings of Inter-Noise 99: The 1999 Congress and Exposition on Noise Control Engineering*, Fort Lauderdale FL, USA (December 1999), pp. 1099-1104

H. Amick, **M. Gendreau**, and A. Bayat, "Dynamic Characteristics of Structures Extracted from In-situ Testing," *Proceedings of the International Society for Optical Engineering (SPIE)*, Vol. 3786, Denver CO, USA (July 1999), pp. 40-63

M. Gendreau, "Effects of Acoustic Noise on Optical Equipment," *Proceedings of the International Society for Optical Engineering (SPIE)*, Vol. 3786, Denver CO, USA (July 1999), pp. 4-13

Presentations without Proceedings

M. Gendreau and H. Amick, “Mechanical and Footfall Vibration Impact to Healthcare Facilities: Criteria and Design Strategies based on Research and Case Studies,” Invited Presentation for 2009 Winter Conference of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), Chicago IL, USA, 26 January 2009

H. Amick and **M. Gendreau**, “‘Vibration Kills’ and Other Lessons from the Trenches,” Invited Presentation for Acoustics 08 Paris, Paris, France, 3 July 2008

M. Gendreau, “Physics, Psychoacoustics, and Sound Spatialization,” Invited Presentation, Mills College, Oakland CA, USA, 14 November 2007

H. Amick, A. Chasey, and **M. Gendreau**, “Tool or Facility – What Should it Be? Reconciling Differences between Production Equipment Needs and Facility Support,” 1st ISMI Symposium on Manufacturing Effectiveness, SEMATECH, Austin TX, USA, 27 October 2004

<http://ismi.sematech.org/ismisymposium/past/I/session8.htm>

M. Gendreau, “Vibration Design in Advanced Technology Buildings,” Invited Keynote Presentation for The Scandinavian Vibration Society (SVIB) Vibrationsdagen, Norges Geotekniske Institutt (NGI), Oslo, Norway, 25 November 2003

H. Amick and **M. Gendreau**, “Getting the Right Vibration and Acoustics Performance at the Right Cost,” Invited Presentation for the 2003 International Conference on Nanotechnology Research Facilities and Labs, Tradeline Conference Series, San Antonio TX, USA, 9 October 2003

M. Gendreau, “Building Design for Advanced Technology Instruments Sensitive to Acoustical Noise,” Invited Seminar, presented at Buildings for Advanced Technology Workshop, National Institute of Standards and Technology, Gaithersburg MD, USA, 14 January 2003

http://nanobuildings.com/bat/presentations/downloads/MGendreau_BuildingDesign.pdf

H. Amick, **M. Gendreau**, and C. G. Gordon, “Vibrations of Raised Access Floors,” Invited Paper, presented at the First Pan-American/Iberian Meeting on Acoustics; 144th Meeting of the Acoustical Society of America, Cancun, Mexico, 2 December 2002

Workshops and Tutorials (including Continuing Education)

M. Gendreau, Hal Amick, Todd Busch, and Stephen Jaeger, “Introduction to Vibration, Acoustics, and Noise,” AIA Convention 2006, Room 303 Los Angeles Convention Center, Los Angeles CA, USA, 7 June 2006 (3.75 LUs)

Hal Amick, **M. Gendreau**, Ahmad Soueid, and Tom Vogt, “Nanotechnology and its Required Environment: Facilities for Nanoscale Research,” IEST 2005 Fall Conference, Hyatt Regency Woodfield, Schaumburg IL, USA, 14 November 2005

Other Publications

H. Amick, **M. Gendreau**, and T. Xu, "On the Appropriate Timing for Facility Vibration Surveys," *Semiconductor Fabtech*, No. 25, March 2005, Cleanroom Section

M. Gendreau, "Specification of the effects of acoustic noise on optical tools," *Noise & Vibration Worldwide*, Vol. 32, No. 4, April 2001, pp. 17-22