
MINUTES OF THE SPRING 2004 MEETING

Date: Sunday, February 22, 2004

Time & Place: 10:00 a.m.
Room 1047 ERF Building
842 W. Taylor Street
University of Illinois at Chicago

Present: Members and Ex-Officio
Berger, Bergman, Banerjee, Dohner, Feeny, Flowers, Hamidzadeh, Han, Luo, Rahn, Royston

Non-Members
B. Epureanu, T. Kalmar-Nagy, D. Quinn, M. Seif, X. He, and J. Y. Shen

Han (TCVS Chair) called the meeting to order at 10:00 a.m. Each of those in attendance introduced himself/herself.

1. Approval of Minutes

A motion was made and seconded to approve the minutes (as corrected) of the Fall 2003 meeting. The minutes were approved by a voice vote.

2. New Business

a) Report on TCVS budget (Han for Clark)

A detailed treasurer's report is attached.

In summary, it was reported that TCVS had three sub-accounts. They are (1) the TCVS Discretionary sub-account (1/31/04 balance = \$1,562.58), (2) the den Hartog Award sub-account (1/31/04 balance = \$9,780.94), and (3) the Myklestad Award sub-account ((1/31/04 balance = \$10,008.50).

There was some discussion on the status of the accounts. In particular, it was noted that TCVS has been trying to build up the award accounts so that the awards can be elevated to the status of DED awards. At present, that will require a minimum of \$50,000 for each award. The costs associated with the awards (plaques, honoraria, etc.) have been taken from the TCVS Discretionary sub-account so as to not deplete the award accounts for such items.

b) Report on IMECE 2003 and 2004 (Rahn)

Rahn reported that the TCVS sponsored the following three symposia at IMECE 2003:

Nanoscale Dynamics, Sensing and Control – 1 session, 5 papers

Session Organizer: Arvind Raman

Nonlinear Dynamics in Mechanical Systems – 3 sessions, 6+7+8 = 21 papers
Session Organizers: Jean W. Zu & George Flowers

Vibration and Control of Mechanical Systems – 8 sessions, 7*6 + 7 = 49 papers
Session Organizers: Albert Luo, Hamid Hamidzadeh, & Homer Rahnejat
Note: Ten papers shifted to Poster Session (2 withdrawals).

TCVS Total = 12 sessions, 75 papers

TCVS was pre-allocated 12 sessions, lost three, and then regained them. Due to the hard work of the Session Organizers, many papers were attracted to the conference. An additional 3 sessions would have allowed an optimal 5 papers/session (18 min/paper) instead of 6 papers/session (15 min/paper), 7 papers/session (13 min/paper), or 8 papers/session (12 min/paper). Despite repeated requests for additional sessions, they were not provided. Session organizers elected not to reject some papers and/or shift them to the Poster Session, resulting in large sessions.

For the first time, ASME required all authors and organizers to use the ASME web-based conference tool for IMECE 2003 at <http://www.asmeconferences.org/congress03/>. Despite some initial bugs, the webtool worked pretty well. It also enabled conference organizers to closely monitor the status of each session.

Chris thanked the Session Organizers for their efforts to make the TCVS sessions at IMECE 2003 a success. Albert Luo was specifically noted for an excellent job of attracting papers, organizing reviews, and working out the bugs in the IMECE webtool.

For IMECE 2004, TCVS is sponsoring the following three symposia:

Symposium on Dynamics, Acoustics & Simulations – Pre-allocated 6 sessions. Dynamics, Vibrations and Acoustics in Linear and Nonlinear Systems; Flow-Induced and Thermal-Induced Vibrations in Continuous Media; Stability, Bifurcations, Chaos, Solitons and Fractals, Diffusion and Transport; Computational Methods in Complex Dynamical Systems & Acoustics; Simulation and Animation for Complex Dynamical Systems
Organizers: Hamid Hamidzadeh, Homer Rahnejat, and Albert Luo

Symposium on System Identification Techniques – Pre-allocated 3 sessions. Novel signal processing techniques in parameter and system identification; Reduced order modeling; Modal identification and control in rotating systems; Nonlinear robust observers; Applications to non-destructive evaluation and damage detection problems; Applications to emerging problems in mechanics, bioengineering, controls, etc.
Organizers: Chin An Tan and Carole Mei,

Symposium on Nonlinear Dynamics, Experiments, and Signal Analysis – Pre-allocated 3 sessions. Experiments on fundamental or applied dynamical systems; Experimental observation of nonlinear dynamic phenomena; Experimental methods; Data visualization methods; Transform analyses; Modal analysis; Phase space reconstruction methods; System identification
Organizers: Brian Feeny and Alan Haddow

Current Status: Author abstract submission deadline extended to March 5, 2004 at the ASME conference website: <http://www.asmeconferences.org/Congress04/>. Sessions may be reallocated based on number of abstract submissions at that time.

Hahn reported that DED has requested that TCVS no longer organize sessions for the IMECE and shift our focus for even years to the IDETC. This is because DED and ASME were unable to come to a satisfactory agreement concerning the allocation/sharing of profits derived from IMECE.

Concern was expressed that this dispute was a matter between DED and ASME. It was noted that IMECE provides a forum for favorable exposure for the TCVS and that we should not forgo the opportunity if our membership is interested in organizing sessions. It was also pointed out that TCVS should get credit for organizing sessions, something that several of the members felt was not presently occurring for our IMECE sessions.

The idea of organizing a Vibrations Conference at the even year IDETC was brought forward. Hamidzadeh mentioned that the Power Transmission and Gearing Committee has begun having an annual conference and that we should discuss the pros and cons with the PT&G chair. Han pointed out that supporting an annual Vibrations Conference may require changes in the TCVS bylaws and suggested that this be done. I

After some discussion, two motions were introduced by Han. The first stated that "the TCVS will examine the possibility of organizing an even year Vibrations Conference at the IDETC." This motion was passed, with abstentions from Hamidzadeh and Dohner.

The second stated that "TCVS will continue to participate in organizing sessions for IMECE as long as there is interest by the TCVS membership." This motion was passed, with abstentions from Hamidzadeh and Dohner.

c) Report on IDETC 2003 (Shabana and Royston)

A detailed report for the IDETC 2003 is attached. Royston presented and discussed the report.

In summary, the Vibrations Conference has 325 papers and one panel session. For IDETC 2003, there were 972 attendees, with 504 full registrations being paid. A profit of **\$60,476** was generated for the DED Custodial Fund.

Ahmed Shabana, Thomas Royston, and Robert Parker, as well as the symposia organizers, were recognized and thanked for their efforts in organizing the IDETC 2003.

d) Report on IDETC 2005 (Hamidzadeh and Luo)

A detailed report was provided and is attached.

There was some discussion concerning using the ASME webtool. Hamidzadeh reported that the 2005 ASME/IEEE International Conference on Mechatronic and Embedded Systems and Applications (MESA'05) has expressed interest in participating in the IDETC 2005. Han made a motion that "TCVS would be very supportive of having the MESA Conference for the IDETC 2005." The motion was seconded and passed unanimously. Han will present this idea to the DED executive committee and report their response back to the TCVS.

e) Report on Proposal for IDETC 2007 (Tzou)

H.S. Tsou was unable to attend, but he provided a written proposal and an email summary of the current status with regard to the planning of IDETC 2007.

"I've been working on this IDETC_007 for a while, although you don't hear from me. There are something new almost on weekly basis. As the deadline comes to an end (today), I have to wrap up whatever I've gathered and present to the Executive and TCVS Committees. New Orleans was my first pick. However, due to delay of possible local contacts, I went to talk to ME chair at UNLV. They quickly responded and warmly welcomed the opportunity. Accordingly, without further day, I went ahead to gather Las Vegas information and contacted additional people to support the event.

In any case, here is what I have prepared for your consideration (attached in the appendix). I apologize for the change, without consulting with either of you. Although DETC was held in Las Vegas in 1999, please note that according to survey data in Table 1, 96-99% of re-visitors were still "very satisfied" with their visit. Additional travel, expenditures, hotel, convention facilities, arts and cultures, local attractions (excluding the well-known Las Vegas events), etc. are detailed in the proposal.

Again, I appreciate your consideration and support."

f) Report on Design Show (Dohner)

Dohner reported that ASME sessions for NMW04 have been broken into six tracks and a total of thirty one sessions - 14 DED sessions; 4 MED and MD sessions; 3 PEMD sessions; 3 MED sessions, 3 T&S sessions, and 3 MD 3 sessions. Details of individual tracks and their session are provided in the attached report.

Dohner noted that TCVS was not allocated any sessions for 2004. He suggested that his successor consider remedying this problem.

Han made a motion thanking Jeff Dohner for his years of service to TCVS. The motion was seconded and approved.

g) Report on Journal of Vibration and Acoustics (Bergman)

A detailed report was distributed by Bergman. Points that were highlighted are:

The Journal is doing well in terms of backlog (about four issues) and profitability. It is currently the fourth most profitable ASME journal.

A name change for the Journal was discussed at length. Based upon input from a variety of sources, including the Journal AE's and DED executive committee members, Bergman has proposed changing the name to the Journal of Dynamics, Vibration, and Acoustics. He will pursue this matter with the appropriate ASME committee(s).

h) Liaison Reports

The TCVS Liaison for each group is given in parentheses.

Noise Control and Acoustics Division (Grosh)

Karl Grosh could not attend the meeting but indicated that he had nothing to report with regard to NCAD.

Applied Mechanics Division – Dynamic Systems and Structures Committee (Luo)

For 2003, there were 3 symposia and 7 individual sessions requested. They are:

- **Symposium on Nonlinear Dynamics and Stochastic Mechanics** (Xie and Namachchivaya) Requested 3 sessions but received 2 sessions from AMD.
- **Symposium on Vibration and Control of Mechanical Systems** (H. Rahjenat, H. Hamidzadeh, A. Luo) Requested 2 sessions and received none

- **Comments:** Bappa Bannerjee of Caterpillar and Bala Balchandran of the Univ. of Maryland were planning on organizing a symposium with three sessions, but they have decided not to pursue it.
- 10th **Symposium on Active Control of Vibration and Noise (DSC** - N. Jalili and J. Tang; **Design** - C.A. Tan; and **AMD** - H.S. Tzou) Requested 2 sessions from AMD and received none. DSC supported 4 sessions.

For 2004, 1 symposia (2 sessions) and 2 individual sessions were requested. They are:

- **Nonlinear Dynamics, Control and Stochastic Mechanics** (Epureanu, Amabili, and Flowers) 2 sessions
- **Multi-field Coupling in Dynamic Systems and Control** (Mockensturm) 1 session
- **Advances in System Identification Techniques** (Tan and Mei) 1 session
- **Dynamics, Acoustics and Simulations** (Luo, Hamidzadeh and Rajhat) 0 session

The ASME structure is changing. AMD may go with Materials Division and heat Transfer Division to form a **Basic Engineering Institute**. There will be 45 (or 47) institute in ASME.

Applied Mechanics Review – (Pierre)

Christophe Pierre could not attend the meeting and he asked Bogdan Epureanu to present the report in his place. Epureanu reported that

- 1) There has been a 25% reduction in income. This was due to two factors. First, there was an overall drop in subscriptions. Second, the abstract subscriptions and article subscriptions were separated. A significant number of library subscribers had dropped the abstract category.
- 2) The number of pages will be cut to 480 per year.
- 3) Only a single printed issue will be produced each year. However, there will be bi-monthly web publication.
- 4) AMR was looking at ways to have more of the journal work done by authors rather than by staff as a way to reduce costs.
- 5) There is a one year backlog of review articles (18 total) for the journal.

Aerospace Division--Adaptive Structures Committee (Wang)

Wang was unable to attend. He submitted a written report. The AS Committee is sponsoring 4 smart structure conferences this year: SPIE, AIAA-ASME/SDM, ICAST, ASME/IMECE. We (TCVS) have good collaboration with the AS Committee in the past, especially during ASME/IMECE. Although there is no need/plan for formal joint sessions this year, members of the two committees have been participating in each other's conferences as individual participants.

Design Engineering Division – Power Transmission and Gearing Committee (Parker)

Parker was unable to attend the meeting and no report was given.

DED International Activities Committee (Dyke)

Dyke was unable to attend the meeting. She submitted a written report that is summarized below.

- 1) The committee has agreed to continue its support of ICED (International Conference on Engineering Design), MOVIC (Motion and Vibration Control), and SEED (Sharing Experiences in Engineering Design).

- 2) A new international society known as the "Design Engineering Special Interest Group" is being formed to oversee ICED design conferences. ASME is participating as a cooperating society.
- 3) 2nd Symposium on International Issues in Engineering Design (IIED). After the successful first symposium in Pittsburgh in 2001, the International Activities Committee of the Design Engineering Division will hold a second symposium as part of the 2004 IDETC. The committee invites abstracts on issues associated with international collaboration and issues in engineering design.

Topics of special interest include:

Design projects conducted by teams around the world.

Communication techniques used to facilitate international team participation.

Approaches to design engineering and product development - the cultural similarities and mismatches.

Cultural dependencies - What are the driving issues?

Design projects through industry and academic collaboration.

Cooperative arrangements and projects between universities in different countries.

.Development of interdisciplinary teams. Inclusive and adaptive design.

Design for the elderly and physically challenged.

The role of ergonomics in design.

Concentration on patient safety in medical equipment design.

Product life cycle as a design criteria.

Sustainable design.

Design engineering in service to humanity.

i) Report on TCVS Web Page Development (Raman)

Raman was not able to attend the meeting and no report was presented. Rahn indicated that he had been receiving information from Raman and had been regularly updating the web page.

j) Industrial Subcommittee (Dohner, Banerjee, and Chen)

Dohner first provided some background discussion on the Industrial Subcommittee. It was originally formed to assess the opinion of industry with regard to the activities of ASME. A survey was conducted, with some mixed results. Consideration was given to supporting another conference rather than National Manufacturer's Week (NMW), but the Design Division decided to strengthen its commitment to that activity and that support has been maintained for the past four years. He noted that the NMW was very focused on small business. Dohner provided two specific recommendations for TCVS to consider.

- 2) Stronger industrial representation on the committee. He noted that he was the last industrial member of the committee.

- 3) He recommended that his successor give some consideration to supporting another conference rather than NMW. He suggested that there were a number of possible venues that were more theoretical in perspective and that might offer a stronger opportunity for collaboration and partnership.

Dohner will be cycling off TCVS and becoming a friend. Appreciation was expressed for his efforts on behalf of TCVS.

k) Report from Subcommittee on Micro- and Nano-scale Systems (Ray and Raman)

Raman was unable to attend the meeting and no report was given.

l) ASME Fellow Nominating Subcommittee (Wang)

Wang was unable to attend. He submitted a written report.

Two potential candidates have been identified and the nomination process has been started. He hopes to have good news to report this fall.

m) Other new business.

None.

n) Old business

Han expressed his concern that the TCVS must give careful consideration to its role and mission if it is to remain strong and active. After a lengthy discussion, it was generally agreed that the TCVS would consider adopting the same name as that used by the Journal (currently Journal of Vibration and Acoustics) and that we would consider this issue again at the Fall 2004 meeting.

o) Election of New Officers

Buddy Clark was nominated by Rahn and seconded by Hamidzadeh to become the new TCVS Chair. The committee voted to approve the nomination.

George Flowers was nominated by Han and seconded by Parker to become the new TCVS Vice Chair. The committee voted to approve the nomination.

Chris Rahn was nominated by Luo and seconded by Dohner to become the new TCVS Secretary. The committee voted to approve the nomination.

p) Election of New Members

The committee met in a closed session to discuss the candidates and vote. The members whose terms are expiring and are eligible for renewal are Brian Feeny, Sotirios Natsiavas, and Shirley Dyke. After some discussion, it was decided that the membership of Sotirios Natsiavas would not be renewed because of multiple absences from TCVS meetings. The memberships of Brian Feeny and Shirley Dyke were each renewed for a second term. Bogdan Epureanu, Nader Jalili, and Dane Quinn were each elected as new members. Their terms will begin July 1, 2004.

The meeting was adjourned at 12:00 pm.

Treasurer's Report for the Technical Committee of Vibration and Sound
January 31, 2004

Sub-Account 5041 – TCVS Discretionary

Description	Beginning Balance 7/31/03	Debit	Credit	Ending Balance 1/31/04
FUND BALANCE	\$3,468.00	(\$353.37)	\$0.00	\$3,114.63
PERIODIC INTEREST	\$0.00	\$0.00	\$32.92	\$32.92
CAPITAL GAINS & LOSS	\$0.00	\$0.00	\$35.52	\$35.52
UNREALIZED CAPITAL GAINS & LOSS	\$0.00	(\$13.21)	\$202.71	\$189.50
DETC Expenses: Plaques, Graphics And Honoraria	\$0.00	(\$2,013.24)	\$203.25	(1,809.99)
Grand Totals:	<u>\$3,468.00</u>	<u>(\$2,379.82)</u>	<u>\$474.40</u>	<u>\$1,562.58</u>

Sub-Account 5007 – Myklestad Award

Description	Beginning Balance	Debit	Credit	Ending Balance
FUND BALANCE	\$8,361.12	\$0.00	\$449.32	\$8,805.06
PERIODIC INTEREST	\$0.00	\$0.00	\$134.02	\$134.02
CAPITAL GAINS & LOSS	\$0.00	\$0.00	\$179.37	\$179.37
UNREALIZED CAPITAL GAINS & LOSS	\$0.00	(\$37.36)	\$927.41	\$890.05
Grand Totals:	<u>\$8,355.74</u>	<u>(\$37.36)</u>	<u>\$1,690.12</u>	<u>\$10,008.50</u>

Sub-Account 5004 – Den Hartog Award

Description	Beginning Balance	Debit	Credit	Ending Balance
FUND BALANCE	\$8,163.53	\$0.00	\$441.36	\$8,604.89
PERIODIC INTEREST	\$0.00	\$0.00	\$131.07	\$131.07
CAPITAL GAINS & LOSS	\$0.00	\$0.00	\$175.35	\$175.35
UNREALIZED CAPITAL GAINS & LOSS	\$0.00	(\$36.39)	\$906.32	\$869.63
Grand Totals:	<u>\$8,163.53</u>	<u>(\$36.39)</u>	<u>\$1654.10</u>	<u>\$9780.94</u>

Notes:

The time period for this report (7-31-03 to 1-31-04) somewhat overlaps that given in the Fall 2003 meeting report because of the way ASME reports the data to me, so some of the credits and debits reflected in the fall report are also included in this one. In the future, we will try to report the data with standard start/end cycles.

REPORT ON
2003 DESIGN ENGINEERING TECHNICAL CONFERENCES

September 2-6, 2003 in Chicago, Illinois

International Design Engineering Technical Conferences
Chicago Marriott Downtown, Chicago, Illinois
September 2-6, 2003

FINANCIAL SUMMARY

	<u>BUDGETED</u>	<u>ACTUAL</u>
<u>REVENUE</u>		
Conference Revenue	\$260,975	355,375
Revenue Transfer to Tech Pubs	51,500	71,700
Net Revenue	<u>209,475</u>	<u>283,675</u>
<u>EXPENSES</u>		
Direct	142,208	171,449
Service Costs	51,750	51,750
Total Expense	<u>193,958</u>	<u>223,199</u>
SURPLUS/(DEFICIT)	<u>15,517</u>	<u>60,476</u>
<u>SURPLUS SHARE:</u>		
Division Custodian Fund	100%	15,517
		60,476

ATTENDANCE SUMMARY

ATTENDANCE CATEGORY	BUDGETED	ACTUAL
Full Registration (Advanced)	470	504
Full Registration (On-Site)	10	74
One Day (Advanced)	15	65
One Day (On-Site)	20	30
Student Members	100	236
Student Non-Members	25	63
TOTAL	640	972

ASME IDETC 2003 – Summary of Technical Paper & Panel session counts

- 1) VIB = **325 papers + 1 panel session (19 symposiums)**
- 2) PTG = **130 papers**
- 3) CIE = **131 papers + 2 panel sessions**
- 4) RSAFP = **12 papers**
- 5) DAC = **143 papers + 1 panel session**
- 6) DTM = **56 papers**
- 7) DFM = **39 papers**
- 8) SERA = **3 papers**
- 9) IDETC: Risk-based Design: **1 panel session**
- 10) Keynote Lectures: **6**

TOTAL = 839 papers + 5 panel sessions

**Report on
ASME International 20th Biennial Conference on Mechanical Vibration and Noise (VIB)
for TCVS Spring Meeting on Feb 22, 2004**

The confirmed and approved symposiums are placed on IDETC 2005 websites and posted on TCVS websites. For the confirmed symposiums, we have 6 clusters which can guide authors to submit their manuscripts to appropriate symposium. One late symposium was not included in websites.

Under my invitation, Professor Feiyue Wang (University of Arizona) submitted a proposal to organize **The 2005 ASME/IEEE International Conference on Mechatronic and Embedded Systems and Applications** (MESA'05) in conjunction with VIB. Initially, Professor Wang wanted ASME Dynamical Systems Division and IEEE to support this conference. Professor Wang said that this conference will have about 150-200 papers. After I discussed with Professor Wang, our TCVS can support this conference as a part of 20th Biennial Conference on Mechanical Vibration and Noise. Therefore, I bring this issue to TCVS to discuss if we can support this conference as a part of VIB. Enclosed, please find the proposal.

Confirmed and Approved Symposiums

In order to guide the authors to submit manuscripts to the appropriate symposium, the following clusters are roughly developed.

- 1. Dynamics, Vibrations and Controls**
- 2. Nonlinear Dynamics, Complex Systems and Stability**
- 3. Vibrations, Noise and Controls**
- 4. MEMS, Sensors and Nano-Technology**
- 5. Fluid and Structure Interactions**
- 6. Experimental Dynamics, Identifications and Simulations**

Dynamics, Vibrations and Controls

- Random vibrations and control (J.Q. Sun)
- Vibration and Control of Continuous Systems (C. Rahn and R. Parker)
- Vibration and Control of Mechanical Systems (W. Zhu)
- Dynamics, Vibrations and Controls in Manufacturing Systems (C. S. Suh, A. Srinivasa, R. Langari)
- Engine and Power Train Dynamics (H. Rahnejat and S. Theodossiades)
- The Vibration of Complex Structures (M.P. Castanier and C. Pierre)
- Modeling, Vibration and Control of Rotor Systems (Y. Ishida, G.Flowers and G. Meng)

Nonlinear Dynamics, Complex Systems and Stability

- Non-smooth Mechanical Systems (J. Awrejcewicz)
- Friction Induced Vibration and Noise (M. A. Ozbek)
- Dynamics, Oscillations and Stability (P.Yu, L. Librescu)
- Chaos, Fractals, Solitons, Diffusion and Transports in Classic and Quantum Dynamics (A. Luo)

- Nonlinear Dynamics, Optimization and Reliability of Mechanical Systems (S. Natsiavas and C. Papadimitriou)
- Nonlinear Vibrations and Control of Structures (G. Rega, W. Lacarbonara, H. Yabuno)

Vibrations, Noise and Controls

- Active Control of Vibration and Noise (Nader Jalili)
- Vibrations and Acoustics in Bio-mechanical Systems (A. Al-Jumaily, M. Fatemi)
- Vibration Control -- Active, Passive or Hybrid Methods (K. W. Wang and W. Clark)
- Acoustics and Wave Propagations (L. Dai, R.N. Jazar)

MEMS, Sensors and Nano-Technology

- Nonlinear dynamics, bifurcations and chaos in nano- and micro- electromechanical systems (O. Gottlieb, S. Shaw, K. Turnar)
- Dynamic Analysis of Nano- and Micro-Electromechanical Systems (J. Lu, S. Xiao)

Fluid and Structure Interactions

- The Flow and Thermal Induced Vibration in Mechanical Systems (H. Nayeb-Hashemi and N. Saniei)
- Nonlinear Fluid-Structure Interactions (B. Epureanu)
- Recent Advances in Controllable Fluids and Systems (M. Ahmadian)

Experimental Dynamics, Identifications and Simulations

- Coupling experimental based models with analytical models in linear and nonlinear dynamics (G. Catania, L. Garbaldi, O. Meneghetti, M. Sidahmed) ✓
- Nonlinear Dynamics Experimentation, Characterization and System Identification (B. Feeny, G. Kerschen)
- Dynamic Signal Processing on Engineering System Monitoring and Diagnostics (C.K. Mechefake, M. Pan, P.W.T. Tse)
- System Identification and Reduced Order Modeling With Applications to Linear and Nonlinear Systems (L. Bergman, A. Vakakis and D. Quinn)

Confirmed and non-Approved Symposium and conference

- Material behaviors, Instability and Tribology Issues at Macro and Micro/Nanoscales (X. He, "xiaoling he" xiaoling@uwm.edu)
- The 2005 ASME/IEEE International Conference on Mechatronic and Embedded Systems and Applications (MESA '05) (Fei-Yue Wang, feiyue@sie.arizona.edu)

The conference will be jointly organized by ASME and IEEE to promote international effort in research, development, and applications in mechatronic and embedded systems. Both mechatronic and embedded systems have undergone a tremendous growth over the past decade, one mainly in the fields of mechanical and electrical engineering and the other mainly in the

fields of electrical and computer engineering. However, it is time to bring the two topics together due to their intrinsic nature of interdisciplinary, the increasing demands for high levels of integration and performance, and the trend for developing small, fast, and cheap products.

Therefore, the idea is to attract researchers and practitioners from ASME with strong background in mechatronic and mechanical systems, and from IEEE with strong background in embedded and electronic systems to attend the MESA'05, and make MESA as a future venue for interested members of ASME and IEEE to exchange their ideas and experiences for new directions in research and development of mechanical, electrical and computer engineering.

Website link addresses for all conferences

- The 2005 DFM conference web site is <http://www.isr.umd.edu/dfm/2005/>
- The website for MSNDC conference is <http://www.me.uic.edu/orgs/MSNDC-2005/>
- The website for CIE is <http://www.asme.org/divisions/cie/events/cie2005/cie2005cfp.html>
- The Design and Automation conference committee website is <http://www.me.washington.edu/~asmeda/>
- the Power Transmission and Gearing Committee conference is:
<http://asme gear.eng.ohio-state.edu/>
- 18th Reliability, Stress Analysis & Failure Prevention Conference (RSAFP) is
<http://www.poly-eng.uakron.edu/Conf/ASME-IDETC-2005.htm>
- 17th International Conference on Design Theory and Methodology (DTM) is www.me.mtu.edu/dtm200

Albert Luo
DETC Program Chair
Feb 15, 2004

Hamid Hamidzadeh
DETC Chair
Feb.15, 2004

Proposal for ASME/IEEE MESA'05
**The 2005 ASME/IEEE International Conference on Mechatronic and
Embedded Systems and Applications (MESA'05)**
in
International Design Engineering Technical Conferences

Time: September 25-28, 2005

Location: Long Beach, California, USA

The conference will be jointly organized by ASME and IEEE to promote international effort in research, development, and applications in mechatronic and embedded systems. Both mechatronic and embedded systems have undergone a tremendous growth over the past decade, one mainly in the fields of mechanical and electrical engineering and the other mainly in the fields of electrical and computer engineering. However, it is time to bring the two topics together due to their intrinsic nature of interdisciplinary, the increasing demands for high levels of integration and performance, and the trend for developing small, fast, and cheap products.

Therefore, the idea is to attract researchers and practitioners from ASME with strong background in mechatronic and mechanical systems, and from IEEE with strong background in embedded and electronic systems to attend the MESA'05, and make MESA as a future venue for interested members of ASME and IEEE to exchange their ideas and experiences for new directions in research and development of mechanical, electrical and computer engineering.

The General Chair of ASME/IEEE MESA'05 will be Professor Fei-Yue Wang, an member of ASME and an elected Fellow of IEEE. Prof. Wang has chaired numerous IEEE International Conferences since 1998, and most recently, is the General Chair for 2003 IEEE International Conference on Intelligent Transportation Systems. Prof. Wang is also the Secretary of IEEE Intelligent Transportation Systems Council and elected member of the Board of Governors of the IEEE Society of Systems, Man, and Cybernetics. Thus, Prof. Wang is well qualified for organizing this conference. The Program Chair for this conference will be Dr. Tan Min of the Chinese Academy of Sciences, a leading expert in research and development of intelligent robotics and embedded systems in China.

Submitted by:

Fei-Yue Wang, Professor
Director, Program for Advanced Research in Complex Systems at the University
of Arizona
Director, The Key Lab of Complex Systems and Intelligence Science at the
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**ASME Session at NMW04
Report to TCVS, Feb. 22, 2004**

ASME sessions for NMW04 have been broken into six tracks and a total of thirty one sessions - 14 DED sessions; 4 MED and MD sessions; 3 PEMD sessions; 3 MED sessions, 3 T&S sessions, and 3 MD 3 sessions. Details of individual tracks and their session are given below.

General Session:

"The Adaptive Supply Chain: Optimizing the Manufacturing Industry" *Dick Conrad, Senior Vice President, Global Operation Supply Chain – HP* (contact via Cece lee)

1. Design Engineering Track – Design Engineering Division (DED):

1. "Going Online to Accelerate Products to Market" *Robert McGill, SolidWorks Corporation* (contact via Kim Orso)
2. "Research on 'Smart' Metal Tooling and Meso/Micro Rapid Manufacturing of Miniature Parts" *Xiaochun, Li – Univ. of Wisconsin*
3. "Manufacturing Design, Tooling, Process and Quality Analysis and Simulation System" - *Steve W. Tuszynski*
4. "Robust Electronic Product Design" *Dr. Bharat S. Thakkar - Illinois Institute of Technology*
5. "Design for No-Assembly: Applications and Design Methods" *Sridhar Kota - University of Michigan*
6. "Use of Design and Process Wizards in CAD/CAM Applications" *Dr. Phanindranath Vedula - EDS PLM Solutions*
7. "Development of a General Purpose Checklist for Design and Manufacturing Issues Associated with the Product Realization Process: A Discussion" *John P. Eimermacher, Paul M. Weaver, Richard P., Storrack Jr. - University of Dayton*
8. "Compliant Mechanisms: Design Tools and Applications in Industry" *G. K. Ananthasuresh - University of Pennsylvania*

1A. Design for Manufacturing Track – Design Engineering Division (DED):

1. "Applications of Finite Element Analysis in Design for Reliability and Six Sigma" *Roberto Cammino - Advanced Tools and Simulation Group, Motorola*
2. "Manufacturing from Digital Engineering Definition" *Frank Tomich - Principal, Quality Engineering, Boeing*
3. "Designing a Digital Manufacturing solution" *Bob Axtman, Steve Milliren - Delmia Corp*
4. "Knowledge-Based Estimating Models" *Johnny Gillilan - Vought Aircraft Systems*
5. "Design for Manufacturing at IBM" *Mark Chitjian - IBM, CATIA Manufacturing Tech Support Specialist*
6. "Designing for Paperless Manufacturing" *Andrew Anagnost - Senior Marketing Director, AutoDesk*

2. Manufacturing & Industrial Automation Track
- Manufacturing Engineering Division (MED):

1. "Project Management for Manufacturing Professionals and Supervisors" - *Dr. A. Badiru*
2. "Taking Lean Manufacturing to the Next Level with the Right Mix of People, Process and Systems" *Sami Cassis - Factory Logic*
3. "Near-Zero downtime Factory" *Jay Lee - Univ. of Wisconsin*

- Management Division (MD):

4. "Lean Manufacturing – A small business perspective" *Thomas L. Davis – Trilogy Plastics, Inc.*

3. Plant Engineering & Maintenance Management Track - Plant Engineering & Maintenance Division (PEMD)

1. "**How Common Sense Benefits in Facilities Management**" **Anne M. Lucietto - Fermi National Accelerator Laboratory**
2. "Reliability & Maintenance, the Business of Manufacturing" *Dennis McCormick - Lincoln Technology Corporation*
3. "Increasing cash Flow through Depreciation reclassification" *Donald Archer – Carpenter, Mountjoy & Bressler, P.S.C.*

4. Enterprise IT, Logistics Supply Chain Management Track: Manufacturing Engineering Division (MED)

1. "Lessons learned from Implementing a Paperless Work Management System – How to develop and implement a complex computer based system in a compressed time frame" *William Weiblen, David Borup – Pratt & Whitney Aircraft*
2. "Maximizing Service Parts Logistics: A Framework for Success" *Kevin Poole – Cap Gemini Ernst & Young*
3. "Intelligent Manufacturing Systems (IMS) and United States Manufacturers" *Sujeet Chand – Rockwell Automation & Head of Delegation for the US IMS Team*
4. "Supply Chain Apps Just Don't Perform – Maybe It's the Data" *Lloyd Adams, Mike Gohl – International Truck and Engine Corp.*

5. Technology Transfer track - Technology & Society Division (T&S):

1. "Protecting Inventions with Patents" *Robert L. Burns - Finnegan, Henderson, Farabow, Garrett & Dunner*
2. "Managing Strategic Technology Partnering" *Patrick O'Reilley, John Paul Burns - Finnegan, Henderson, Farabow, Garrett & Dunner*
3. "Technology Transfer and Commercialization Strategies" *Arthur Rogers*

6. Executive Management track - Management Division (MD):

1. "Effective Project Engineering – Looking at the basics" *Thomas L. Davis – Trilogy Plastics, Inc.*
2. "Making the transition from Engineer to Manager: Lessons learned along the way" *John Bozewicz – Naval Surface Warfare Center*
3. "Entrepreneurship and Technology Commercialization" *Steven. Nichols – University of Texas*

ASME Journal of Vibration and Acoustics
Report to Design Engineering Division Executive Committee
February, 2004

Editor: Lawrence A. Bergman, Editor
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Purpose and Scope:

The purpose of the Journal of Vibration and Acoustics is to serve as a vehicle for the communication of original research results of permanent interest in the areas mechanical vibration of linear and nonlinear dynamical systems, structural dynamics, physical and structural acoustics, and noise control. Papers published by the journal are full-length articles of considerable depth. The journal also presents Technical Briefs, which are intended to serve as a means for the rapid communication of recent developments in an abridged form, and reviews of books and published reports considered by the editor to be of interest to the community. Specific topic areas covered include but are not limited to: vibration suppression; vibration of nonlinear and multibody systems; system identification, modal analysis and state estimation; structural dynamics and control; signal processing and signature analysis; rotor dynamics; passive and active vibration control; passive and active damping; random vibration; acoustic emissions; active noise control; machinery noise; flow induced noise and vibration; and machinery dynamics.

Associate Editors

Returning Associate Editors Three associate editors whose first terms ended on Dec. 31, 2003 — Drs. Joseph Cusumano, Roger Ohayon, and Jonathan Wickert — have agreed to serve a second term.

New Associate Editors In addition to the twelve ongoing and returning associate editors, three new associate editors began their terms on January 1, 2004. They are Dr. William W. Clark of the University of Pittsburgh, Dr. Karl Grosh of the University of Michigan, and Dr. Sotirios Natsiavas of Aristotle University in Thessaloniki, Greece. The expansion of the editorial board by two associate editors will positively impact review statistics.

Retiring Associate Editor Dr. Ray P. S. Han completed his second term on December 31, 2003.

Special Projects

I've encouraged several people to proceed with special projects. Prof. Gordon Kirk at Virginia Tech guest-edited the October 2003 issue, dedicated to "The Contributions of Jurgen Lund to the field of Rotor Dynamics." Professor Karl Grosh at the University of Michigan has secured several papers on "Acoustics and Dynamics of MEMS Devices," which will appear as a special section of the July 2004 issue. Dr. Ahmed Shabana has agreed to guest edit a special issue devoted to multi-body dynamical systems, which we're targeting for 2005. Dr. Steen Krenk at the Technical University of Denmark has instituted, and will oversee, a regular book review feature for the Journal. The first set of reviews will appear in the April 2004 issue.

Outlook

We remain among the more profitable ASME journals. For the past several years, we have used all of our 600 page allotment, and we presently have a healthy two to three issue backlog. The number of submissions remains relatively constant, as does the percentage of papers accepted for publication. We continue to suffer from the occasional overly long review cycle, though in most cases the authors share the blame by their reluctance to submit revised manuscripts in a timely way. Phil suggested to me some months ago that I consider moving to bimonthly publication, and I am proceeding with this as a means of getting papers into print faster. I am somewhat concerned by the reasonably sharp drop in JVA's annual importance factor, though as any statistician knows, a sudden change is not generally indicative of long term behavior. In the case of JVA, though, two 800 pound gorillas are the primary competition: Journal of Sound and Vibration, and Journal of the Acoustic Society of America. The former now publishes 4 volumes of 10 issues each per year, and the latter publishes monthly and captures the vast majority of good physical acoustics and structural acoustics papers. In addition, we compete with the Journal of Applied Mechanics and the Journal of Dynamic Systems, Measurement and Control within ASME for relevant papers. Outside of ASME, Ali Nayfeh's two journals, Nonlinear Dynamics and Journal of Vibration and Control, publish monthly and are growing in stature, the International Journal of Non-linear Mechanics publishes monthly, and a plethora of civil engineering-related journals publish a large number of papers in structural dynamics and control. To this, add the signal processing and analysis journals, additional dynamics journals published privately and by, for example, AIAA, and the large number of journals that focus on computation, such as CMAME, IJSS, and IJNME, all of which provide some degree of overlap with JVA. Clearly, we have a small piece of the market, and we have little or no flexibility in how we are able to

compete with the big guns as well as new, up-and-coming journals. I've suggested this as a topic for serious discussion at a future BOE/PC meeting. Finally, I've been requested by the new committee on nonlinear and multi-body dynamics to consider a name change for the Journal. I have queried the associate editors and executive committee of DED on the subject and have received a good deal of encouragement. Suggestions for the new name are invariably some permutation of vibration, acoustics and dynamics (i.e., Journal of Dynamics, Vibration and Acoustics). This will be discussed further at the Division level.

Papers Published in 2000

Issue	Duration of Review		# Full Papers	Tech Briefs	Discussions	# Pages	Total Pages Allocated FY 2000
	Ave # Days	Median # Days					
Jan 2000	NA	NA	12	3		92	
Apr 2000	NA	NA	12	2		96	
July 2000	NA	NA	20		2	152	
Oct 2000	NA	NA	16	2		136	
Total	NA	NA	60	7	2	476	600

Papers Published in 2001

Issue	Duration of Review		# Full Papers	Tech Briefs	Discussions	# Pages	Total Pages Allocated FY 2001
	Ave # Days	Median # Days					
Jan 2001	545	470	16	2		128	
Apr 2001	554	551	19	2		160	
July 2001	500	481	14	6		128	
Oct 2001	343	340	14	5	1	140	
Total	485.5		63	15	1	556	600

Papers Published in 2002

Issue	Duration of Review		# Full Papers	Tech Briefs	Discussion	# Pages	Total Pages Allocated FY 2002
	Ave # Days	Median # Days					
Jan 2002	404	368	20	4		164	
April 2002	403	390	17	1		164	
July 2002	458	424	15	3		140	
Oct 2002	308	265	21	5		200	
Total	393.25		66	11	0	668	600

Papers Published in 2003

Issue	Duration of Review		# Full Papers	Tech Briefs	Discussion	# Pages	Total Pages Allocated FY 2003
	Ave # Months	Median # Months					
Jan 2003	18	15	18	1	0	132	
April 2003	26	25	13	1	0	116	
July 2003	21	16	20	3	0	164	
Oct 2003	13	12	15	0	0	100	
Total	19.5	17	66	5	0	512	600

*Summary of Associate Editor Activity (Jan. 1, 2000 – Dec. 31, 2003) **

	Papers Assigned	Papers Accept	Papers Reject	Papers Withdraw	Papers under Revision	Papers under Review	Papers Completed	Current Open Papers	% Papers Accept	% Papers Reject	% Papers Withdraw
FY 2000	161	75	61	6			154		53%	43%	4%
FY 2001	151	77	52	21			155		51%	35%	14%
FY 2002	157	92	68	5			167		56%	41%	3%
FY 2003	147	75	59	25	45	105	159	150	47%	37%	16%
Total	616	319	240	57	45	105	616	150	52%	39%	9%

Name	Institution	Term 1 End Date	Term 2 End Date	Area of Research
Editor				
Lawrence A. Bergman	University of Illinois, Urbana-Champaign	12/31/2004		
Current and Ongoing Associate Editors				
William C. Clark	University of Pittsburgh	12/31/2006		vibration control, sensors & actuators
Joseph P. Cusumano	Penn State University	12/31/2003	12/31/2006	nonlinear and machinery dynamics
Shirley J. Dyke	Washington University	12/31/2005		structural control, smart structures, structural health monitoring
George Flowers	Auburn University	12/31/2002	12/31/2005	rotordynamics
Michael I. Friswell	University of Bristol	12/31/2001	12/31/2004	modal analysis, testing, finite element updates, Europe
Jerry H. Ginsberg	Georgia Institute of Technology	12/31/2002	12/31/2005	acoustics, waves
Karl Grosh	University of Michigan	12/31/2006		structural acoustics, bioacoustics, MEMS
Richard F. Keltie	North Carolina State University	12/31/2004		structural acoustics, noise control
John A. Main	DARPA	12/31/2005		smart materials, adaptive structures
Sotirios Natsiavas	Aristotle University	12/31/2006		nonlinear systems, multi-body systems, parameter identification
Roger Ohayon	Conservatoire National des Arts et Metiers (CNAM)	12/31/2003	12/31/2006	fluid structure interaction, structural acoustics, smart materials and structures
Robert G. Parker	Ohio State University	12/31/2005		gyroscopic systems
D. Dane Quinn	University of Akron	12/31/2005		nonlinear dynamics, resonance capture, robust control
Chin An Tan	Wayne State University	12/31/2004		vibration & control of continuous systems, frictional & braking systems
Jonathan A. Wickert	Carnegie Mellon University	12/31/2003	12/31/2006	vibration of continuous systems, rotating systems, frictional systems
Retired Associate Editors 12/31/03				
Ray P. S. Han	University of Iowa	12/31/2000	12/31/2003	dynamic finite element analysis
Special Issue Editors				
Karl Grosh	University of Michigan	SI Jul 2004		acoustics and dynamics of MEMS devices
R. Gordon Kirk	Virginia Tech	SI Oct. 03		contribution of Jurgen Lund to rotor dynamics
Ahmed Shabana	Univ. of Illinois, Chicago	SI 2005		multi-body dynamical systems



A Proposal for the

2007 ASME

INTERNATIONAL DESIGN ENGINEERING TECHNICAL

CONFERENCES (IDETC_007)

in Las Vegas, NV, September xx-xx, 2007



Submitted to

ASME DESIGN DIVISION EXECUTIVE COMMITTEE

and

TECHNICAL COMMITTEE ON VIBRATION AND SOUND

Prepared by:

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Date: February 9, 2004



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INTRODUCTION – IDETC_007

This is to request your kind consideration and support for the proposed **2007 ASME International Design Engineering Technical Conferences (IDETC_007)** to be held in Las Vegas, Nevada in September 2007. The proposed organization structure includes a General Conference Committee, coordinating activities among divisions and committees, a Technical Program Committee with a Tutorial/workshop Committee, an Advisory Committee and an International Scientific Committee. It is proposed that Prof. H. S. Tzou at the University of Kentucky (UK) serves as the Conference General Chair, whose short C.V. and past conference and professional experience are provided in **Appendix 1**. Dean Lester at the University of Kentucky has fully endorsed the activity and his commitment is provided in **Appendix 2**. Prof. Tzou has contacted the Mechanical Engineering Department at the University of Nevada, Las Vegas and the ME Chair and a senior professor have agreed to serve on the Local Organizing Committee. Although some people have been selected or contacted to coordinate various activities of the IDETC-007, additional efforts need to be made to build up the conference organization structure, in order to assure a perfect execution in 2006 and 2007. Other detailed analyses, travel, cost and location information are respectively addressed in this proposal thereafter.

CONFERENCE COMMITTEES

Committee Structures The conference execution committees include 1) **General Conference Committee**, 2) **Technical Program Committee**, 3) **Tutorial/workshop Committee**, 4) **Local Organizing Committee**, 5) **Advisory Committee**, and 6) **International Scientific Committee**. The General Conference Committee consists of a Conference General Chair and two Vice-chairs (one is reserved for the TCVS Chair); the Technical Program Committee consists of a Technical Program Chair and two Vice-chairs; the Tutorial/workshop Committee has a Chair; two faculty members at the UNLV serve on the Local Organizing Committee; three past DETC General Chairs and UK's dean serve on the Advisory Committee; and foreign representatives who coordinate regional activities serve on the International Scientific Committee. The proposed Conference General Chair has been actively and continuously working on various conference, symposia, workshop activities for over 15 years. His short C.V. and professional activities are outlined in **Appendix 1**. Additional committees may be organized once needs are developed in the process.

Conference General Chair

Prof. Hornsen (HS) Tzou
Department of Mechanical Engineering
University of Kentucky, Lexington, KY 40506-0503
Tel: (859) 257-6336 x80643; *Fax:* (859) 257-3304; *E-Mail:* hstzou@engr.uky.edu

General Conference Vice-Chair

TBD (Reserved for the TCVS Chair)
TBD

Technical Program Chair

Prof. Scott L. Stevens
Department of Mechanical Engineering
University of Kentucky, Lexington, KY 40506-0503
Tel: (859) 257-6336; *Fax:* (859) 257-3304; *E-Mail:* stephens@engr.uky.edu

Technical Program Vice-Chair

TBD

Tutorial and Workshop Program Chair

Prof. Suzanne W. Smith
Department of Mechanical Engineering
University of Kentucky, Lexington, KY 40506-0503
Tel: (859) 257-6336; *Fax:* (859) 257-3304; *E-Mail:* ssmith@engr.uky.edu

Local Organizing Committee

Prof. M. B. Trabia, Chairman, Department of Mechanical Engineering
University of Nevada, Las Vegas NV 89154-4027
Phone: (702)895-0957; Fax: (702)895-3936; Email: mbt@me.unlv.edu

Prof. Woosoon Yim, Department of Mechanical Engineering
University of Nevada, Las Vegas, Las Vegas, NV 89154-4027
Phone:(702) 895-0956, Fax:(702) 895-3936; Email: wy@me.unlv.edu

Advisory Committee

Prof. Ahmed Shabana - 2003 General Conference Chair in Chicago
Department of Mechanical Engineering, University of Illinois at Chicago.

Prof. Dean Mook - 2001 General Conference Chair in Pittsburgh
Department of Engineering Science and Mechanics, VPI

Prof. Subhash Sinha - 1999 General Conference Chair
Department of Mechanical Engineering, Auburn University

Dr. Thomas Lester, Dean of Engineering, University of Kentucky

International Scientific Committee International representatives from various countries, who will be coordinating regional activities and symposia organization are also, or will be, contacted to serve on the International Scientific Committee:

Germany:

Prof. Dr.-Ing. habil. Ulrich Gabbert, Lehrstuhl für Numerische Mechanik
Institut für Mechanik, Otto-von-Guericke-Universität Magdeburg, GERMANY
Tel.: +49 391 67-18609; Fax.: +49 391 67-12439; Email: ulrich.gabbert@mb.uni-magdeburg.de

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Roger OHAYON, Professor, Chair of Mechanics
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Hong Kong:

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Department of Mechanical Engineering
Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong
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CONFERENCE LOCATION

Las Vegas is a giant magnet that attracts people all over the world to visit the city where, used to be “adults” Disney Land, has been evolving to an all-around family entertainment center. The city, being dynamic itself, also provides culture, arts and natures, such as rugged mountains, red rock canyons and deep desert valleys. The region's favorable climate makes outdoor activity around Las Vegas an attractive option year-round. Detailed local attractions are discussed later.

Furthermore, Las Vegas was selected as the 1999 ASME DETC conference site. The conference, under the leadership of Prof. Sinha, attracted participants all over the world. International Conference on Motion and Vibration Control (MOVIC) was also organized right after the DETC99. Many international participants attended both conferences in Las Vegas. Regarding the attitudes of *re-visiting* Las Vegas, the vast majority of visitors (99%) reported being “very satisfied” with their trip to Las Vegas, **Table 1**.

Table 1
SUMMARY TABLE OF ATTITUDINAL INFORMATION

	1999	2000	2001	2002	2003
Proportion who were “very satisfied” with their current trip to Las Vegas	96%	96%	96%	97%	99%
Proportion who complained about not winning enough money (among those who were “somewhat satisfied”)*	6%	9%	18%	15%	N/A*
Proportion who complained about their hotel (among those who were “somewhat satisfied”)*	21%	19%	11%	11%	N/A*

** Source: Page 8 GLS Research, Las Vegas Visitor Profile Fiscal Year 2003

City Climate Las Vegas has a “desert” climate. It is hot in daytime and relatively cold at night. This daytime heat will keep conference participants staying in the conference room

and attending the technical sessions. They should be able to enjoy the city lights and entertainment at nights.

Transportation and Proximity to Other Cities The International Airport is located at the end of Las Vegas strip. It is convenient and relatively “cheap” to anywhere in the city. A list of available airline services to Las Vegas is provided in **Appendix 3**.

Local Universities and Conference Location The University of Las Vegas – Las Vegas is in the city. The Chair and a senior faculty in the Department of Mechanical Engineering have agreed to chair and coordinate the Local Organizing Committee. **Appendix 4** outlines possible conference locations on the strip.

Local Attractions See **Appendix 5**.

These detailed issues are respectively addressed next.

POSSIBLE CONFERENCE SITES

There are plenty of hotels and conventional facilities on the strip and in downtown Las Vegas which have been frequently used for major conferences. The final selection of one of these hotels depends on the ASME Office that oversees the conference organization. All these hotels are close to the International Airport and within walking distance of many attractions and restaurants. The 1999 ASME DETC chaired by Prof. Sinha was also held in Las Vegas. **Appendix 4** indicates possible conference locations on the strip.



Where do you want to be? Anywhere is fine...

COST ELEMENTS ¹

Las Vegas is one of the most visited cities in the world. There are direct flights not only from major U.S. cities, but also from Europe, Japan, Mexico, Canada, etc. The airfares are mostly below \$350/round trip from anywhere in the States, with Saturday-night stay, and they can be around \$200/round trip during promotions. Foreign participants should be able to secure reasonable airfare, even with direct flights. A list of available airline services to Las Vegas is provided in **Appendix 3**. Although forty-five percent (45%) of visitors to Las Vegas in 2003 traveled by air, there is 55% visitors visited Las Vegas by automobiles in past few years. Participants from neighboring states can easily access the city by cars. **Table 2** summarizes the facts for the last five years. Note that the 1999 DECT participants were among the 46% in 1999.

Table 2
SUMMARY TABLE OF TRAVEL PLANNING CHARACTERISTICS

	1999	2000	2001	2002	2003
Proportion of respondents who traveled to Las Vegas by ground transportation (automobile/bus/RV)	55%	54%	52%	56%	55%
Proportion of respondents who traveled to Las Vegas by air	46%	46%	48%	44%	45%
Proportion of respondents who toured nearby places*	25%	22%	23%	17%	N/A*

** Source: Page 4 GLS Research, Las Vegas Visitor Profile Fiscal Year 2003

Corporate or Other Cost Share At this earlier planning state, none has been established. However, financial supports from industries, e.g., United Technology, Belcan, Toyota, Lexmark, etc., will be explored.

Conference Registration Cost The decision of registration fee will follow ASME procedures. Since the local travel expenses are reasonable and the city is so attractive, it is believed that the conference will be well attended.

Expenditures Average expenditures for a 2.5/3-day visit are summarized in **Table 3**. The average local transportation is only around **\$7.31/stay**; the average lodging is only **\$77/per night**, **Table 3**.

¹ Information Source: *LAS VEGAS VISITOR PROFILE, Fiscal Year 2003, Annual Report, July 1, 2002 to June 30, 2003*, Las Vegas Convention and Visitors Authority, prepared by GLS Research.

Table 3
SUMMARY TABLE OF TRIP CHARACTERISTICS AND EXPENDITURES

	1999	2000	2001	2002	2003
Average trip expenditures for local transport (all respondents)		\$6.47	\$3.91	\$6.13	\$7.31
Lodging expenditures (average per night, hotel/motel overnight visitors only — excludes package and tour/travel group visitors)	\$66.86	\$74.30	\$85.34	\$74.76	\$77.76
Proportion of respondents who paid a regular room rate (among those who stayed overnight in a hotel or motel)	35%	27%	30%	25%	19%
Proportion of visitors who bought a hotel or airline package or traveled as part of a tour/travel group where accommodations were included (among those who stayed overnight in a hotel or motel)	25%	22%	24%	19%	18%
Average cost of package per person (among package/tour group visitors)	\$510.98	\$549.30	\$496.19	\$340.69	\$425.99
Average trip expenditures for food and drink (all respondents)	\$170.76	\$187.32	\$213.17	\$193.92	\$182.59
Average trip expenditures for local transport (all respondents)	\$57.31	\$61.01	\$61.62	\$51.46	\$47.80
Average trip expenditures for shopping (all respondents)	\$87.94	\$94.00	\$106.75	\$83.53	\$80.18
Average trip expenditures for shows (all respondents)	\$33.84	\$38.39	\$45.54	\$44.79	\$37.82
Average trip expenditures for sightseeing (all respondents)	\$5.67	\$9.16	\$17.40	\$9.35	\$2.98

** Source: Page 6 GLS Research, Las Vegas Visitor Profile Fiscal Year 2003

ENTERTAINMENT



Besides the well-known lights, music and entertainment in the city, there are also excellent natural sceneries and national parks nearby. In 2003, sixty-eight percent (68%) of visitors attended shows during their trip to Las Vegas; 47% of these visitors went to a Las Vegas style production show; more than eight in ten visitors (83%) attended lounge acts; 3% saw a big-name headliner show, while 13% went to a comedy show; and only 1% played golf while visiting Las Vegas, **Table 4**. (The entertainment information presented here are from the Las Vegas Convention and Visitor Authority.) In addition, **Appendix 5** includes all detailed listings of local attractions, including arts and natures in the general Vegas area.

Table 4
SUMMARY TABLE OF ENTERTAINMENT ACTIVITIES

	1999	2000	2001	2002	2003
Proportion who attended any shows during their current stay in Las Vegas	48%	48%	58%	66%	68%
Proportion who attended production shows (among those who attended shows)	75%	71%	65%	57%	47%
Proportion who attended lounge acts (among those who attended shows)	40%	34%	49%	69%	83%
Proportion who went to other paid attractions in Las Vegas	24%	12%	12%	14%	10%
Proportion who played golf while in Las Vegas	2%	2%	3%	2%	1%

** Source: Page 8 GLS Research, Las Vegas Visitor Profile Fiscal Year 2003

APPENDIX 1 RESUME OF THE PROPOSED GENERAL CONFERENCE CHAIR

Short-biography - Hornsen (HS) Tzou

Professor Horn-Sen (H.S.) Tzou earned his M.S. and Ph.D. from the School of Mechanical Engineering at Purdue University in 1979 and 1983, respectively. His teaching and research interests encompass smart structures and structronic systems, hybrid multi-functional structures, micro-actuation biomedical devices and tools; precision mechatronics; dynamics and distributed sensing/control of discrete and distributed systems (shells, plates, etc.); nonlinear joint/contact dynamics and control; electromechanics, opto-thermopiezoelectric devices and systems, ... He has been invited as Visiting Professor (5/1991-1/1992; 8/1998-1/1999) at the Institute of Space and Astronautical Science (ISAS) (Kanagawa, Japan), *Senior JSPS Fellow* (1996) at Tohoku University (Sendai, Japan), Guest Professor (05-07, 1997) at the Otto-von-Guericke University of Magdeburg and German Aerospace Research Establishment (DLR) (Braunschweig, Germany), IRI/ASEE Fellow (1988) at Amway Research R&D, Visiting Professor at National Taiwan University (5-8, 1999) and Peking University (6/2000), Chair of International Cooperation and Guest Professor (5-8, 2001) at Tokyo Institute of Technology (Japan), NASA Faculty Research Fellow (2002), Distinguished Professor and Ph.D. Supervisor (2004-...) at Harbin Institute of Technology (China), etc. He directs the StrucTronics Lab (founded by NSF, JPL, ARO, NASA, AFOSR, Pratt-Whitney, IBM, Ford, industries, etc. since 1985) and also worked at IBM (CAD/CAM and Printer R&D) and Wright Laboratory (Flight Dynamics Lab). He has authored and co-authored several research monographs and over 350 technical publications in journals, proceedings, and books. He authored *Piezoelectric Shells (Distributed Sensing and Control of Continua)* and *Precision Sensor/Actuator Systems with Active Materials*. He also edited five other books: 1) *Intelligent Structural Systems* (with Anderson), 2) *Precision Sensors, Actuators, and Systems* (with Fukuda), and 3) *Dynamics and Control of Distributed Systems* (with Bergman), 4) *Structronic Systems: Smart Structures, Devices, and Systems (2 volumes)*, and 5) *Smart Structures and Structronic Systems* (with Gabbert). Dr. Tzou has won six paper awards (including *ASME and AIAA Best-Paper Awards*) and two *NASA Class-1 New Technology Disclosure Awards* (2001 and 2003). He serves on several ASME technical committees (as Chair, Vice-chair, or member), Associate Technical Editor of ASME Transactions *Journal of Vibration and Acoustics*, and on Editorial Boards of *Mechanical Systems and Signal Processing* (1990-...), *Intelligent Material Systems and Structures* (1995-1997), *Journal of Vibration and Control* (1997-...), *Vibration Encyclopedia* (Academic Press), book series on *Stability, Vibration and Control* (World Scientific Publisher), book series on *Interdisciplinary Science and Technology* (Academic Press), etc. He is a Fellow of ASME and a founding member of the ASME Adaptive Structures and Material Systems Committee. Dr. Tzou has given numerous lectures on smart materials/structures and structronic systems, precision mechatronic systems, distributed sensing and control, etc. in Japan, Germany, China, Canada, France, Taiwan, Hong Kong, U.S.A., etc.

Professional Activities

I) Offices/Professional Assignments Held in Professional Organizations, and Symposium/Conference/Workshop/Panel, etc. Organizations

1. Secretary (1994-1996) and founding member (1991-...): *Adaptive Structures and Material Systems Committee* (ASMS), ASME Aerospace Division. (Chair, 1994-1995: Best-paper Sub-Committee - Dynamics and Control); Draftsman, 1993-1994; 2002-: ASMS Committee Bylaws)
2. Chair (2002-2004); Vice-Chair/Secretary (2000-2002); Committee member (1995-...): *Dynamics and Control of Structures and Systems Committee* (DSSC), ASME Applied Mechanics Division.
3. Committee member (1990-1993, 1993-1996): *Technical Committee on Vibration and Sound* (TCVS), ASME Design Engineering Division. (Chair: Paper-Review Sub-Committee, 1991-1992; Membership, 1995)
(Nominated to the Executive Committee, Design Division, Fall 1996, 1997)
4. Chairman (8/1991-8/1993), Vice-Chairman (8/1989-8/1991), and member (8/1993-1995): *Finite Element Techniques and Computational Mechanics Committee* (FET), ASME Computers in Engineering Division.
5. Panel member, *Active Noise and Vibration Control Panel* (2000-...); *Aerospace Systems Panel* (1990-1995), ASME Dynamic Systems and Control Division.
6. International Scientific Board and Program Committee Members, *7th International Conference on Motion and Vibration Control* (MOVIC 2004), St. Louis, Missouri, August 8-11, 2004.
7. International Advisory Panel, Special Lecture and Workshop Speaker, International Conference on "Planning, Design and Construction of Hardened and Protective Facilities" - HARDFAC 2004, Kuala Lumpur, Malaysia, April 14th-16th, 2004.
8. Symposium Organizer, *Symposium on Active Control of Vibration and Noise*, 2003 Mechanical Engineering Congress, Washington, DC, Nov.16-21, 2003.
9. IBEC International Advisory Board, *International BODY Engineering Conference* (IBEC 2003), Chiba, JAPAN, October 27-29, 2003.
10. Program Committee, the Fifth International Congress on Thermal Stresses and Related Topics, Blacksburg, VA, June 8-11, 2003.
11. Symposium Organizer, *7th Biannual Symposium on Active Control of Vibration and Noise*, 2002 Mechanical Engineering Congress, New Orleans, LA, Nov.17-22, 2002.
12. International Scientific Board, the 6th International Conference on Motion and Vibration Control (MOVIC 2002), Urawa Royal Pines Hotel, Saitama, Japan, August 20-23, 2002.
13. International Steering Committee and Program Committee, Asia-Pacific Vibration Conference, 2001, Hangzhou, Zhenjiang, CHINA, Oct.28 – Nov.1, 2001.
14. Co-Chairman (with Prof. U. Gabbert), 2000 IUTAM Symposium on Smart Structures and Structronic Systems, International Union of Theoretical and Applied Mechanics, Magdeburg, Germany, Sept.26-29, 2000.
15. "Smart Structures and Structronic Systems," Tutorial Organizer and Speaker, IUTAM2000, Symposium on Smart Structures and Structronic Systems, Magdeburg, Germany, September 25, 2000.
16. Steering Committee, International Symposium on Smart Structures and Microsystems (IS3M2000), Royal Plaza Hotel, Kowloon, Hong Kong SAR, October 19-21, 2000.
17. Symposium Organizer, *6th Biannual Symposium on Active Control of Vibration and Noise*, 2000 Mechanical Engineering Congress, Disney Land, Florida, Nov.5-10, 2000.
18. Symposium organizer, " *Mechatronics, Structronics and Smart Materials*," *The Sixteen Biennial*

- ASME Conference on Mechanical Vibration and Noise*, ASME Design Technical Conferences, Las Vegas, NV, September 12-15, 1999.
19. Tutorial and workshop organizer, *Structronics, Mechatronics, and Precision Systems, Smart Materials*, Technical Committee on Vibration and Sound, 1999 ASME Design Technical Conferences, Las Vegas, NV, September 12-15, 1999.
 20. Panel Organizer, *Panel on Recent Advances on Smart Structures and Structronic Systems, The Sixteen Biennial ASME Conference on Mechanical Vibration and Noise*, ASME Design Technical Conferences, Las Vegas, NV, September 12-15, 1999.
 21. Invited Keynote: "Smart Materials, Structures, and Structronics," the 14th Symposium on Aerospace Structures and Materials, Sagamihara, Japan, Oct.29-30, 1998.
 22. Invited Workshop Participant, NSF NCEER Workshop on Advanced Materials, Non-Destruction Evaluation and Condition Assessment for Critical Facilities, Organized by SUNY, Buffalo and VPI&SU, Buffalo/Niagara Falls, NY, August 26-27, 1998.
 23. Symposium Organizer, *5th Biannual Symposium on Active Control of Vibration and Noise*, 1998 Mechanical Engineering Congress, Anaheim, CA, Nov. 15-20, 1998.
 24. Organizing Committee, *4th European Conference on Smart Structures and Materials and 2nd International Conference on Micromechanics, Intelligent Materials and Robotics*, Harrogate, July 6-8, 1998.
 25. Conference Co-Chairman, Euromech 373 Colloquium, Modeling and Control of Adaptive Mechanical Structures, Magdeburg, Germany, March 11-13, 1998.
 26. International Scientific Advisory Committee, *1998 International Conference on Vibration Engineering (ICVE'98)*, Dalian, Liaoning, China, August 1998.
 27. Program Committee, 1998 SPIE North American Smart Structures and Material Conference, San Diego, CA, February 1998.
 28. Symposium organizer (with K. Nonami), "*Smart Materials and Mechatronics*," *The Fifteen Biennial ASME Conference on Mechanical Vibration and Noise*, ASME Design Technical Conferences, Sacramento, CA, September 14-17, 1997.
 29. *Panel on Recent Advances on Smart Structures and Structronic Systems, The Fifteen Biennial ASME Conference on Mechanical Vibration and Noise*, ASME Design Technical Conferences, Sacramento, CA, September 14-17, 1997.
 30. Wissenschaftliches Komitee, Zweite Wissenschaftliche Konferenz, Adaptive Mechanische Systeme - Adaptronic - ADAMES-II, Otto-von-Guericke- Universität Magdeburg, Magdeburg, March 18-19, 1997.
 31. Co-organizer, 1996 *Symposium on Active Control of Vibration and Noise* (Sponsored by four ASME Divisions), ASME International Mechanical Engineering Congress, Atlanta, GA, November 17-22, 1996.
 32. Conference organizing committee and organizer of *Symposium on Vibration of Intelligent Structures*, 1995 ASME 15th Biennial Conference on Mechanical Vibration and Noise, Design Technical Conferences, Sept. 17-21, 1995.
 33. Steering committee, *The 4th, 5th, 6th, and 7th International Symposium on Micro Machines and Human Science* (MHS'93, MHS'94, MHS'95, MHS'96), IEEE Industrial Electronics Society, IEEE Robotics and Automation Society, Japan Society of Mech. Engr., Society of Instrument and Control Engr., Nagoya, JAPAN, October 13-15, 1993; October 2-4, 1994; October 4-6, 1995; October 2-4, 1996.
 34. International steering committee and session chair, *International Symposium on Microsystems, Intelligent Materials and Robots* (MIMR'95), Sendai, JAPAN, September 27-29, 1995. Session chair: Smart Systems-2.
 35. Organizing committee, *1994 International Conference on Intelligent Materials* (ICIM'94),

- Williamsburg, VA, June 5-8, 1994.
36. Organizer and speaker: *Intelligent Structural Systems*, 1994 North American Conference on Smart Structures and Materials, Orlando, FL, February 17-18, 1994.
SPEAKERS: 1. A.M. Baz, Catholic U. of America; 2. T.E. Duclos, Lord Co.; 3. D.J. Inman, VPI; 4. G. Knowles, Grumman Research Center; 5. H.S. Tzou, U. of Kentucky.
 37. Technical program committee, *The Fourteen Biennial ASME Conference on Mechanical Vibration and Noise*, ASME Design Technical Conferences, Albuquerque, New Mexico, September 19-22, 1993.
 38. Symposium and panel organizer, "*Intelligent Structures and Vibrations*," *The Fourteen Biennial ASME Conference on Mechanical Vibration and Noise*, ASME Design Technical Conferences, Albuquerque, New Mexico, September 19-22, 1993.
SPEAKERS: 1. Dr. Alok Das, Phillips Lab, Kirtland AFB, NM; 2. Dr. K. Weiss, Lord Co. Cary, NC; 3. Prof. D. J. Inman, VPI&SU; 4. Prof. K. C. Park, University of Colorado; 5. H.S. Tzou, Univ of Kentucky.
 39. Program chairman: *Finite Element Techniques, Computational Mechanics, Computational Geometry*, 1993 ASME International Computers in Engineering Conference, San Diego, CA, August 8-12, 1993.
 40. Organizer: *Intelligent Structural Systems*, (A Satellite Broadcast TV Course)(3 days), July 21-23, 1993. (Postponed) National Technological University (NTU), Advanced Technology & Management Programs, Fort Collins, Colorado, 80526 and Univ of Kentucky, Engr. Continuing Education, Lexington, KY 40506.
SPEAKERS: 1. A.M. Baz, Catholic U. of America; 2. T.E. Duclos, Lord Co.; 3. D.J. Inman, VPI&SU; 4. M.C. Natori, Institute of Space and Astronautical Science, Japan; 5. G. Knowles, Grumman Co. Research Center; 6. H.S. Tzou, University of Kentucky.
 33. Program committee: *25th and 26th International Symposium on Automotive Technology and Automation, Conference on Mechatronics*, Florence, Italy, June 1-5, 1992 and May 31-June 4, 1993.
 34. Component Technology Development Committee, *Conference on Smart Structures and Intelligent Systems*, SPIE 1993 North American Conferences, Albuquerque, New Mexico, February 1-4, 1993.
 35. Symposium organizer (Design Division)(with K.W. Wang, Penn State), (Dynamic Systems Div.: C.J. Radcliffe; Acoustics Div.: E. Hendricks) *Symposium on Active Control of Vibration and Noise*, "ASME Technical Committee on Vibration and Sound", 1992 ASME Winter Annual Meeting (WAM), Anaheim, CA, 11/8-13, 1992.
 36. Organizing committee and academic committee, *International Conference on Advances in Mechatronics (ICAMT)*, Wuhan, China, October 15-17, 1992.
 37. Program chairman: *Finite Element Techniques, Computational Geometry, Computational Mechanics, Software Engineering, and Software Standards*, ASME International Computers in Engineering Conference, San Francisco, CA, 08, 2-6, 1992.
 38. Workshop organizer (w/ Professor T. Fukuda, Nagoya University, Japan; Janusz Marszalec, Technical Research Center of Finland), *High-Precision Sensors/Actuators and Systems*, 1992 IEEE International Conference on Robotics and Automation, Nice, France, May 10-15, 1992.
SPEAKERS: 1. T. Fukuda, Nagoya University, Japan. (High-precision systems). 2. W. Benecke, Berlin Institute of Technology, Germany. (Silicon based actuators: fabrication and applications). 3. R.S. Fearing, University of California, Berkeley (Micro-mechanical systems: sensors and actuators). 4. K. M. Lee, Georgia Institute of Technology (Design, modeling, and control strategy of spherical motors). 5. Janusz Marszalec, Technical Research Center of Finland (Optical fiber sensors and systems). 6. D.L. Polla, University of Minnesota (Piezoelectric micro

- sensors/actuators: fabrication and applications). 7. H.S. Tzou, University of Kentucky (Distributed piezoelectric neurons and muscles)
39. Steering committee, *The 2nd International Symposium on Micro Machines & Human Science*, Chubu Industrial Advancement Ctr., IEEE Industrial Electronics Society, IEEE R&A Society, Japan Society of Mech. Engr., Society of Instrument & Control Engr., Nagoya, JAPAN, October 8-9, 1991; & Session Chair: *Microactuators (II)*.
 40. Technical program committee, *The Thirteenth Biennial ASME Conference on Mechanical Vibration and Noise*, Miami, FL, September 22-25, 1991.
 41. Symposium and panel organizer, "*Intelligent Structures and Systems*," The Thirteenth Biennial ASME Conference on Mechanical Vibration and Noise, Miami, FL, September 22-25, 1991. Panelists: 1. G.L. Anderson, Army Research Office (Smart Structures); 2. A.M. Baz, Catholic U. of America (Shape-Memory Alloy in Smart Structures); 3. T.E. Duclos, Lord Co. (Electrorheological Fluids); 4. J.E. Hubbard, C.S. Draper Lab. (Distributed Transducers); 5. D.J. Inman, SUNY, Buffalo (Programmable Structures); 6. M. Natori, Institute of Space and Aeronautical Science (ISAS), Japan (Adaptive Structures and Technologies in Japan); 7. H.S. Tzou, U. of Kentucky and ISAS (Distributed Piezoelectric Sensors and Actuators).
 42. Workshop organizer and chairman: "*Piezoelectric "Smart" Systems Applied to Robotics, Micro-Systems, Identification, and Control*," 1991 IEEE International Conference on Robotics and Automation, Sacramento, California, April 7-12, 1991. Speakers: 1. T. Fukuda, Nagoya U., Japan (Micro Manipulator with Multi-DOF's); 2. K.M. Lee, Georgia Tech. (Micro-Motion In-Parallel Manipulator); 3. S. Aoshima, NTT, Japan (Mobile Robot); 4. D.L. Polla, U. of Minnesota (Piezoelectric Micro Sensors/Actuators); 5. H.S. Tzou, U. of Kentucky (Piezoelectric Transducers for Identification, Control, and Micro-Isolation).
 43. Conference co-chairman (with V.K. Varadan): *Coatings and Sensors*, SPIE Technical Symposium on Optical Engineering and Photonics in Aerospace Sensing, Orlando, Florida, April 16-20, 1990; Technical program committee on *Infrared Optical Systems*; Session organizer and chairman on *Smart Coatings*.
 44. Program committee, 3rd International Conference on CAD/CAM, Robotics, and Factories of the Future (CARS&FOF'88), Southfield, Michigan, Aug.14-17, 1988.

II) Editor/Reviewer

1. Associate Technical Editor, ASME Transactions - *Journal of Vibration and Acoustics* (2000-2003).
2. Editorial Board (2002-...), Technische MECHANIK, Magdeburg, Germany.
3. Charter member, 1998, "inScight Editorial Board," *inScight*, Academic Press.
4. Editorial Advisory Board (1997-2001), *Encyclopedia of Vibration*, Academic Press, London, UK, Summer 2001.
5. Editorial Board (1998-...), Book series on *The Professional Mechanical Engineering Series: Multidisciplinary Technologies*, Academic Press, London, UK.
6. Editorial Board (2000-...), *Nonlinear Dynamics and Systems Theory*, International Federation of Nonlinear Analyst and Ukraine National Committee on Theoretical and Applied Mechanics, Academic Periodical Press.
7. Editorial Board Member and Associate Editor: *Mechanical Systems and Signal Processing (Journal of)*, (1991-...), Academic Press, London, UK.
8. Guest Editor: *Mechanical Systems and Signal Processing*, A special issue on Structronics and Smart Structures, 2003, Academic Press, London, UK.
9. Editorial Board: *Journal of Vibration and Control*, (1997-...), Sage Publishing Co., CA.

10. Advisory Board (1996-...): Book series on *Stability, Vibration and Control of Structures*, World Scientific Publishing Co., River Edge, NJ and Singapore.
11. Editorial Board: *Journal of Intelligent Material Systems and Structures*, (1995-1997), Technomic Publishing Co., Lancaster, VA.
12. Guest Editor: *Mechanical Systems and Signal Processing*, A special issue on Active Vibration Control, Vol.(7), No.(4), July 1993, Academic Press, London, UK.
13. Associate Editor: (Distributed Structural Identification and Control) (1989-1991): *Journal of Wave-Material Interaction*, Hemisphere Publishing Co. Inc., Taylor and Francis Publishers, Great Britain.

III) Awards and Honors

1. **ASME Fellow**, American Society of Mechanical Engineers (ASME), June 1996.
2. **NASA Class-1 New Technology Disclosure Award**, Patched Off-axis Electroactive Bending/Twisting Actuator for Thin Shell Optics, S.S. Lih, and G. Hickey, H.S. Tzou, NASA/CalTech (No. NPO30784), 2003.
3. **NASA Class-1 New Technology Disclosure Award**, Deployable Shell Structures with Shape-Control Actuators, G. Hickey, S.S. Lih, and H.S. Tzou, NASA/JPL, (*Technical Brief*, No. NPO-21138) 2001.
4. **Distinguished Professor and Ph.D. Supervisor**, Harbin Institute of Technology, CHINA, January 2004 - ...
5. **Chair of International Cooperation**, Tokyo Institute of Technology, Department of Mechanical Science and Engineering, Tokyo, June 1 – August 30, 2001.
6. **IRI/ASEE Fellow**, Amway R&D, Grand Rapids, MI, May 1998.
7. **Japanese Ministry of Education Fellow**, Japanese Ministry of Education And Institute of Space and Astronautical Science, Japan, September 1998-January 1999.
4. **ASME Best-Paper Award (Mechanical Vibration and Noise)**: ASME Design Engineering Division, 1989 ASME Design Engineering Technical Conference, Montreal, Canada, September 17-20, 1989. Awarded at the 1991 ASME Design Engineering Technical Conference, Miami, FL, September 22-25, 1991.
5. **ASME Best-Paper Award (Finite Elements and Computational Mechanics)**, ASME Computers in Engineering Division, 1993 ASME International Computers in Engineering Conference, San Diego, CA, August 08-12, 1993.
6. **ASME Awards (Service)**, Associate Conference Chair, Program Chair, and Technical Committee Chair, 1992 and 1993 ASME International Computers in Engineering Conferences, Computers in Engineering Division.
7. **Senior JSPS Fellow, Invitation Fellowship**, Japan Society for the Promotion of Science (JSPS), Tokyo, Japan, May-July, 1996.
8. **Japanese Ministry of Education Fellowship**, Research Fellow, Institute of Space and Astronautical Science, Ministry of Education, Japan, May 1991-January 1992.
9. **ASME Best-Paper Award (Mechatronics, Controls, and Robotics)**: ASME Computers in Engineering Division, 1990 ASME International Computers in Engineering Conference, Boston, MA, August 5-9, 1990.
10. **Best-Paper Presentation Award**, Session A-3: *Large Scale Systems*, The 14th National Symposium on Automatic Control, National Jiao-Tong University, Hsinchu, Taiwan, ROC, December 14-15, 1990.
11. **ACC Best-Paper Presentation Award**, Session TA-7: *Modeling and Control of Flexible Manipulator Arms*, 1990 American Control Conference, San Diego, CA, May 23-25, 1990.

12. *AIAA Best-Paper Award* (Structural Dynamics): AIAA 14th Symposium on Aerospace Science and Technology, Dayton, Ohio, March 31, 1988.
13. *College of Engineering Best-Paper Award (1987)*: College of Engineering, University of Kentucky, Lexington, Kentucky, February 28, 1988.

APPENDIX 2 DEAN LESTER'S COMMITMENT

Here is an email communication stating the Engineering Dean's commitment in support of the 2007 IDETC.

Return-path: <lester@engr.uky.edu>
Envelope-to: hstzou@engr.uky.edu
Delivery-date: Fri, 28 Mar 2003 11:13:41 -0500
Received: from [128.163.144.194] (helo=goose.ecc.engr.uky.edu)
by spitfire.ecc.engr.uky.edu with esmtp (Exim 4.14)
id 18ywU7-00042X-Kj; Fri, 28 Mar 2003 11:13:39 -0500
Subject: **ASME Design Technical Conference**
To: "H. S. Tzou" <hstzou@engr.uky.edu>
Cc: rouch@engr.uky.edu, mbeath@engr.uky.edu
Message-ID: <OF24DC5A9B.815331F0-ON85256CF7.0058EB66@ecc.engr.uky.edu>
From: lester@engr.uky.edu
Date: Fri, 28 Mar 2003 11:13:38 -0500
X-MIMETrack: Serialize by Router on ECC/COE(Release 5.0.8 |June 18, 2001) at 03/28/2003
11:13:38 AM MIME-Version: 1.0
Content-type: text/plain; charset=us-ascii X-Spam-Score: 2.5 (++)
X-Scanner: exiscan for exim4 (<http://duncanthrax.net/exiscan/>) *18ywU7-00042X-Kj*xZh26XNFybQ* Status:

H.S.

Enjoyed talking with you and I concur that items 1 through 5 will be supplied from the dean's office. I like the idea of trying to endow an award, and Sharron and I will put that in our basket of opportunities to present to alumni whenever it appears prudent to do so.

I appreciate your efforts to promote the ME program within the professional and academic community.

tom

From: "H. S. Tzou" <hstzou@engr.uky.edu>
To: <lester@engr.uky.edu>
cc:
Subject: ASME Design Technical Conference 03/26/2003 04:28PM

Dear Tom,

Thanks for meeting with me yesterday. As I reported to you, I'm "drafted" to chair the 2007 International Design Technical Conference (IDETC) – the second largest conference, only second to the IMECE. I like to sincerely thank you for your kind encouragement and support. As per your instructions, I like to memorialize the key issues that we discussed.

1. I would appreciate if you could host a reception and to welcome the conference participants the night before the conference. I would love you to stay for the award luncheon, if you have time.
2. I would like to have you serve on the Organizing Committee
3. I would need secretary support to handle massive communication, paper submission/review, paper work, etc. before and after the conference. For a successful conference, it requires 8-month to a-year preparation, one-year execution, and six-month wrap-up.
4. Because of the effort and time involved in the process, I would appreciate if you could recommend a reduced teaching load during that period of time.
5. Some financial support to cover postages, trips to organization meetings or check out conference sites, etc., if possible

You also mentioned Anderson. I thought maybe we can ask him if he is interested in establishing an Anderson Award in the Design Division to promote "practicing engineers or engineering practice ???" or whatever he likes.

Again, I appreciate your encouragement and support. Being a good citizen at UK, I like to use this opportunity to promote our college and to honor UK.

Best regards,

HS

APPENDIX 3 AIR TRAVELS (MCCARRAN INTERNATIONAL AIRPORT)

AeroMexico; AIR CANADA; ALASKA AIRLINES; ALLEGiant AIR; ALOHA AIRLINES; AMERICA WEST AIRLINES; AMERICAN AIRLINES/AMERICAN EAGLE AIRLINES (American Airlines Regional Center); ATA; CONDOR GERMAN AIRLINES; CONTINENTAL AIRLINES; DELTA AIR LINES; FRONTIER AIRLINES, INC.; HAWAIIAN AIRLINES; JAPAN AIRLINES; JetBlue; MIDWEST EXPRESS; NORTHWEST AIRLINES; SOUTHWEST AIRLINES; SUN COUNTRY; UNITED AIRLINES; US AIRWAYS; VANGUARD AIRLINES; VIRGIN ATLANTIC AIRWAYS

APPENDIX 4 LAS VEGAS CONVENTION FACILITIES & RESOURCES

Las Vegas Convention and Visitors Authority

702-892-0711
Cam Usher, GM/Sales
3150 Paradise Road Las Vegas, Nevada
89109

Las Vegas Chamber of Commerce

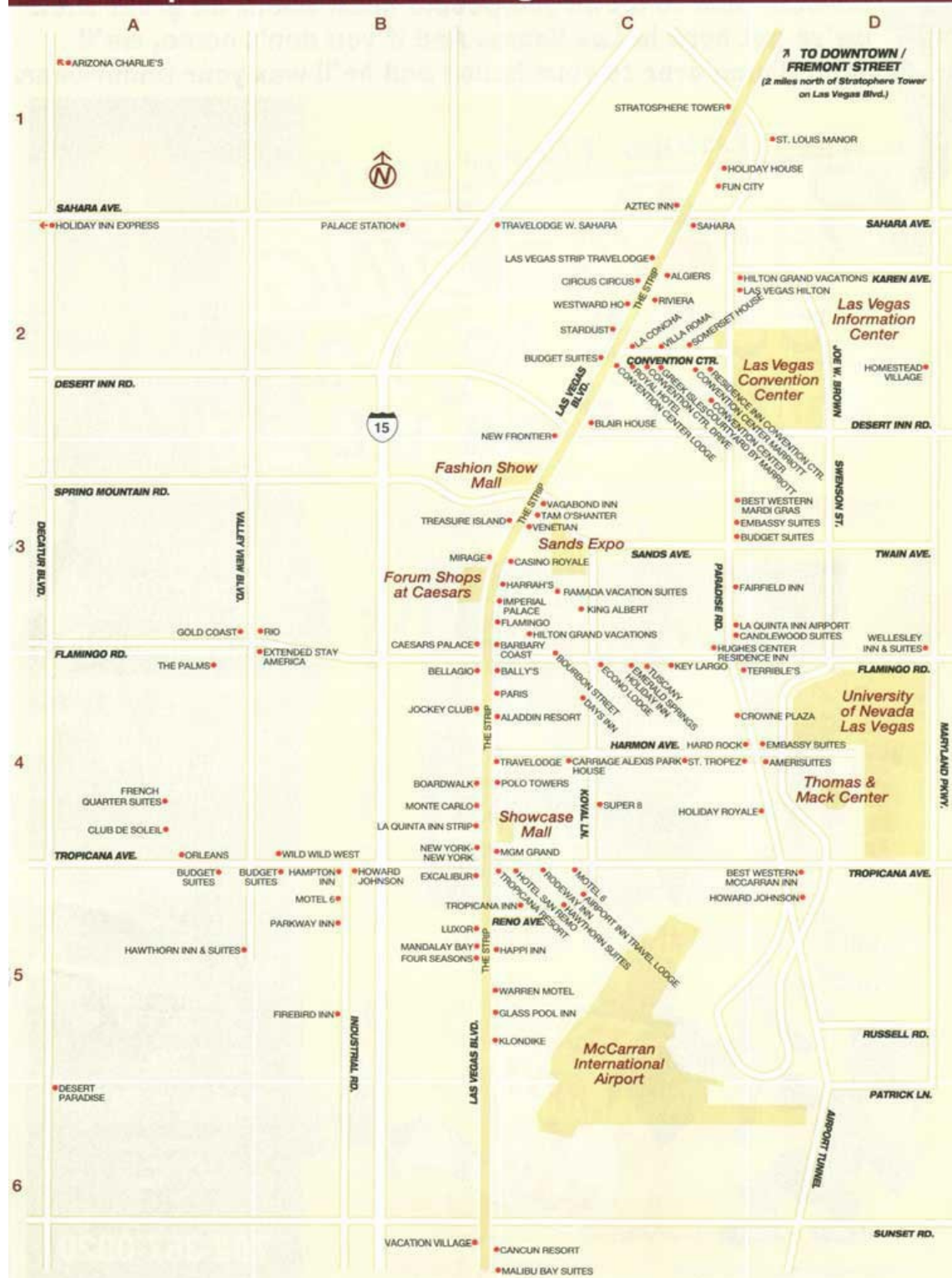
702-735-1616
Mr. Pat Shalmy, President/General
Manager
3720 Howard Hughes Parkway Las
Vegas, Nevada 89109



Map and Hotels of Las Vegas Strip, NV

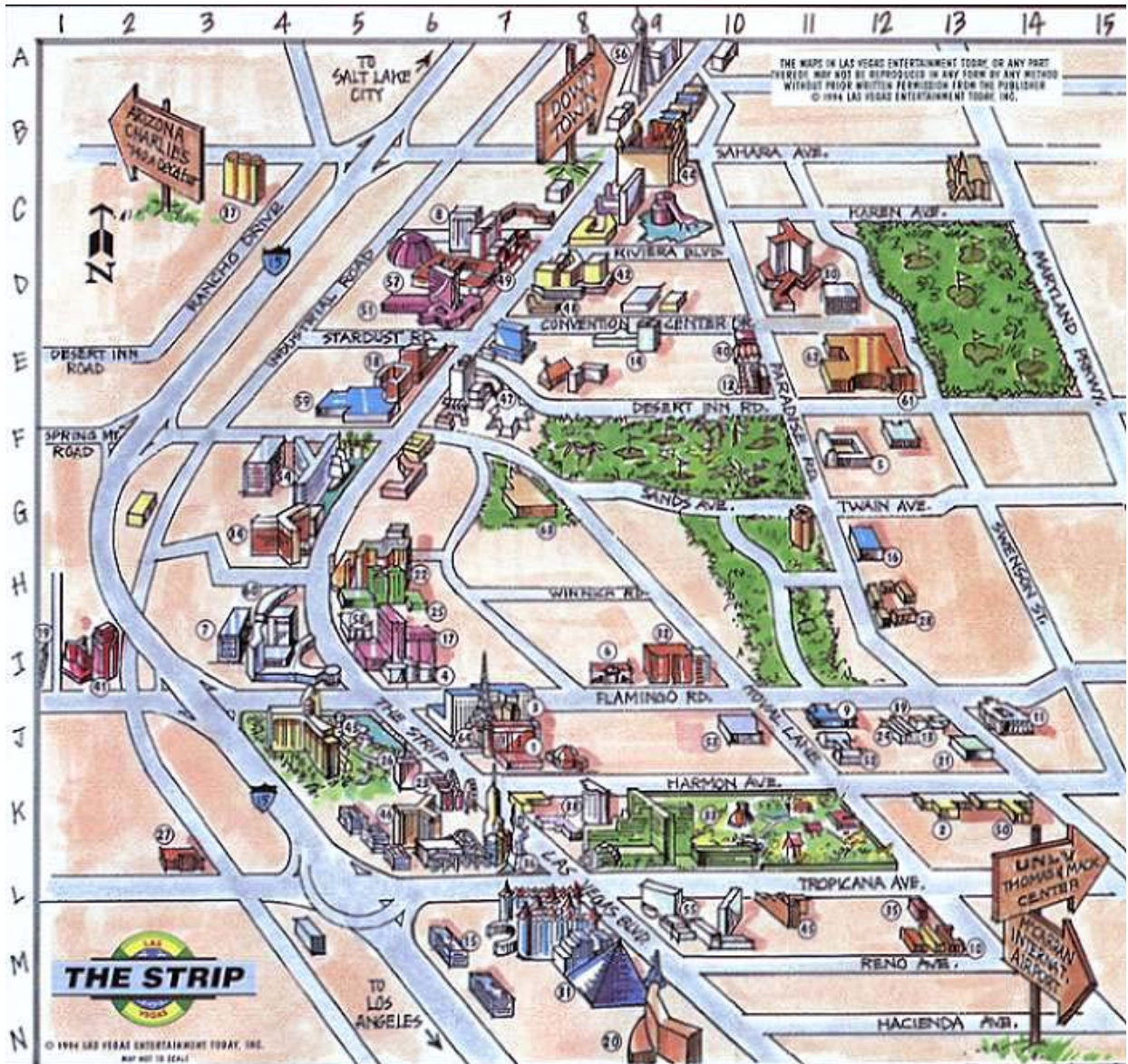
PROPERTIES WITH FEWER THAN 45 ROOMS ARE NOT LISTED

The Strip and Surrounding Area



APPENDIX 5 DINNING ON THE STRIP

All major hotels have excellent dining facilities serving excellent food at very reasonable prices.



Source: Las Vegas Chamber of Competence: <http://www.lvchamber.com/>

Aladdin Hotel & Casino - 1 - J-7
 Alexis Park Resort - 2 - K-12
 Bally's Casino Resort - 3 - J-6
 Barbary Coast Hotel & Casino - 4 - I-6

Hard Rock Hotel & Casino - 21 - K-13
 Harrah's Las Vegas - 22 - H-5
 Holiday Inn Las Vegas - 24 - J-12
 Imperial Palace Hotel & Casino -

Polo Towers - 38 - K-8
 Quality Inn Hotel & Casino - 39 - J-12
 Residence Inn By Marriott - 40 - E-10

Bellagio - 43 - J-4	25 - H-5	Rio Suite Hotel & Casino - 41 - I-2
Best Western Mardi Gras Inn - 5 - F-11	Jockey Club - 26 - J-5	Riviera Hotel & Casino - 42 - D-8
Boardwalk Holiday Casino - 23 - K-6	King 8 Hotel & Gambling Hall - 27 - K-3	Sahara Hotel & Casino - 44 - B-9
Bourbon Street Hotel & Casino - 6 - I-8	La Quinta - Paradise - 28 - H-12	San Remo Hotel - 45 - L-10
Caesars Palace - 7 - I-4	Las Vegas Hilton - 30 - D-11	Sheraton Desert Inn Resort Casino - 47 - F-7
Circus Circus Hotel & Casino - 8 - C-7	Luxor Hotel & Casino - 31 - M-8	Silver City - 48 - D-8
Comfort Inn - Flamingo - 9 - J-11	Mandalay Bay Hotel & Casino - 20 - N-9	Slots of Fun - 49 - D-7
Comfort Inn South - 10 - M-12	Maxim Hotel & Casino - 32 - I-9	St. Tropez Hotel - 50 - K-13
Courtyard by Marriott - 12 - E-10	MGM Grand & Theme Park - 33 - K-10	Stardust Hotel & Casino - 51 - D-6
Crown Plaza Hotel - 13 - J-13	The Mirage - 34 - G-4	Stratosphere Tower - 56 - A-9
Excalibur Hotel & Casino - 15 - L-7	Monte Carlo Resort & Casino - 46 - K-6	Super 8 Motel (Koval) - 52 - J-11
Fairfield Inn by Marriott - 16 - G-11	Motel 6 - 35 - L-12	Terribles Hotel Casino - 11 - J-14
Flamingo Hilton - 17 - I-5	New York-New York Hotel Casino - 36 - I-7	Town Hall Casino Hotel - 53 - J-10
Frontier Hotel & Casino - 18 - E-6	O'Sheas Hilton Casino - 58 - H-5	Treasure Island (TI) - 54 - F-4
Gold Coast Hotel & Casino - 19 - I-1	Palace Station Hotel & Casino - 37 - C-4	Tropicana Resort & Casino - 55 - L-9
	Paris Casino Resort - 64 - J-7	Westward Ho Hotel & Casino - 57 - D-6

APPENDIX 6 LOCAL ATTRACTIONS



Besides the well-known lights, music and entertainment in the city, there are also excellent natural sceneries and national parks nearby. Detailed information listed below are from the Las Vegas Convention and Visitor Authority.

Entertainment Capital of the World

(Source: Las Vegas Convention and Visitor Authority)

Images of the Rat Pack swilling martinis, showgirls in elaborate headdresses and Elvis impersonators are indelible in the minds of Las Vegas visitors. Today, Las Vegas' entertainment scene still has plenty of the old glamour, but it has evolved to include so much more. In addition to the classic staples, the destination offers a lineup of award-winning magicians, Broadway-caliber productions, world-renowned concert headliners and unique-to-Vegas production shows.

Fast Facts 2003

- Celine Dion's "A New Day..." headlines five nights per week at the new \$95 million Colosseum at Caesars Palace. The show is produced by Franco Dragone, the critically acclaimed director of the Cirque du Soleil shows, "Mystere," "Quidam," "Alegria" and "O." "A New Day..." features 60 international dancers, musicians and artists and state-of-the art technology including multi-media elements displayed on North America's largest LED (Light Emitting Diode) screen.

- Cirque du Soleil's ethereal combination of acrobats and special effects dazzles audiences throughout the Strip. The group produces shows for a variety of properties including "Mystere" at TI. Bellagio's "O" is the troupe's first foray into aquatic theater, featuring a cast of 81 artists performing in and above a pool containing 1.5 million gallons of water. Cirque du Soleil's newest show, "Zumanity", opened August 2003 at the New York-New York. The troupe is currently working on a new show for the MGM Grand, scheduled to open in 2005.
- "Blue Man Group" is a colorful, interactive show playing every night of the week at the Luxor. The groundbreaking performance-art trio playfully incorporates everything from PVC pipes to marshmallows to reams of crepe paper into their act, which is set to the percussive stylings of live musicians.
- The Scintas at the Rio All-Suite Hotel & Casino is the popular family act that combines comedy and music.
- "La Femme" at the MGM Grand is a direct import from the legendary Crazy Horse in Paris, a production famous for celebrating the art of the nude since 1951. "La Femme" combines sensual choreography and unique lighting effects.
- For feathers, sequins, showgirls and tuxedo-clad dancers, "Jubileel," is the multi-million dollar production show at Bally's Las Vegas. The over-the-top show features the nightly sinking of the Titanic on stage. (The show is dark on Fridays.)
- "Les Folies Bergere" at the Tropicana is another classic Las Vegas production, complete with sequined showgirls, glamour and pageantry.
- Master magician Lance Burton performs five nights per week in Monte Carlo's \$27 million theater built in his honor.
- The Mirage's Danny Gans is the man of many voices and uncanny impersonations. He has a repertoire of nearly 300 voices and can impersonate everyone from George Burns to Al Pacino to Kermit the Frog.
- Wayne Newton is "Mr. Las Vegas." His unique showmanship has been entertaining audiences for decades. Newton performs 40 weeks per year, six nights per week at the aptly named "Wayne Newton Theater" at the Stardust Resort & Casino.
- "Legends in Concert," featuring superstar impersonators, is the popular, long-running show at Imperial Palace Hotel & Casino.

Pricing policies, times and dates of shows, purchase of advance tickets and reservation policies are subject to change. Many shows solely admit guests who are 21 years of age or older. Visitors are advised to check in advance with each resort.

Entertainment Venues

Classic Las Vegas showrooms may offer a close glimpse of superstars with seating to accommodate several hundred to more than 4,000 guests. Las Vegas' larger arena-style venues can host crowds well into the tens of thousands.

Events centers and arenas sell out regularly and have featured myriad celebrity acts including Britney Spears, the Rolling Stones, Andrea Bocelli, Cher, Barbra Streisand, Madonna, Garth Brooks and many more.

- Home to the annual FOX Billboard Awards and numerous other televised awards shows, the [MGM Grand Garden Arena](#) is a 17,157-seat special events arena that can accommodate concerts, sporting events and awards shows. The Grand Garden made history when Barbra Streisand returned to the stage after a 20-year hiatus for her legendary New Year's Eve show in 1993.
- Performers as versatile as the destination itself have played to capacity crowds at the 12,000-seat [Mandalay Bay Events Center](#). The Three Tenors, Ricky Martin, Juan Gabriel, Barenaked Ladies, Andrea Bocelli, Tim McGraw and the Eagles are just some of the artists who have brought their talents to the Las Vegas Strip. World championship boxing and other sporting events are also held at the Events Center.
- The \$95 million [Colosseum at Caesars Palace](#) is the contemporary interpretation of its ancient namesake in Rome. The 4,000-seat facility is home to Celine Dion's popular show, "A New Day..." The facility is adaptable to varied types of entertainment when "A New Day..." is dark. In addition to accommodating headliners, it can be configured to host special events, including conversion to a boxing arena.
- Similar to its Los Angeles counterpart, legendary and up-and-coming musical artists have made stops at Mandalay Bay's [House of Blues](#), an intimate venue with a capacity of 1,800. Performers have included Norah Jones, Everclear and Cheap Trick.
- [The Aladdin Theatre for the Performing Arts](#) recently underwent a renovation, creating a 7,000-seat, state-of-the-art venue. The traditional seating auditorium makes the theater an ideal place to see a concert, Broadway-style production, awards show and other types of entertainment.
- With a capacity of 1,400, The Joint at the [Hard Rock Hotel and Casino](#) has played host to legendary acts such as Aerosmith, Blondie, Lenny Kravitz and No Doubt.

Comedy Clubs

Mainstream comedians such as Dennis Miller, Rita Rudner, Ray Romano, Jerry Seinfeld, Drew Carey, Jay Mohr and Kevin James, as well as comedy legends such as Jackie Mason, Harvey Korman and Tim Conway and the Smothers Brothers, headline many hotel showrooms and are regulars on the Las Vegas Strip. Comedy clubs host well-known and rising-star comedians in an intimate atmosphere. A sampling of such clubs includes:

- Catch a Rising Star at the [Excalibur](#)
- The Comedy Stop at the [Tropicana](#)
- The Improv Comedy Club at [Harrah's](#)
- Laugh Trax Comedy Club at [Palace Station](#)
- The Riviera Comedy Club at the [Riviera](#)
- The Second City at the [Flamingo Las Vegas](#)

For additional information, go to www.vegasfreedom.com.

Scenic Getaways

Many travelers are drawn to the lights and excitement of Las Vegas, but too few are aware of the wonders

of Mother Nature that surround them. Rugged mountains, red rock canyons and deep desert valleys offer stunning scenery and myriad outdoor recreational opportunities. The region's favorable climate makes outdoor activity around Las Vegas an attractive option year-round.

Natural Attractions

[Mt. Charleston](#) is 35 miles (56 kilometers) from Las Vegas with its highest elevation at 11,918 feet (3,615 meters). An average of 20 to 30 degrees cooler than Las Vegas, Mt. Charleston is perfect for skiing, picnicking, hiking and horseback riding. In addition to year-round hotel accommodations and tours, full-service camping is also available from May through September. For information, call (702) 873-8800.

[Death Valley](#) is located in western California, 135 miles (216 kilometers) from Las Vegas and a mere 40-minute plane ride away. This scenic wonder has the lowest elevation on the North American continent at 280 feet (84.93 meters) below sea level. Points of interest include Zabriskie Point, 20 Mule Team Canyon and Scotty's Castle. Tours are available.

[The Grand Canyon](#) in western Arizona lies approximately 300 miles (480 kilometers) - a one-hour flight from Las Vegas. Over millions of years, the Colorado River carved this natural wonder that is one mile deep and 277 miles long. Sightseeing air tours of the Grand Canyon depart Las Vegas daily for half-day, full-day and overnight excursions.

[Red Rock Canyon](#) is just 15 miles (24 kilometers) west of Las Vegas. It is a scenic area of rock formations and desert with a 3,000-foot (910-meter) escarpment produced by a thrust fault. Open to the public year-round, Red Rock Canyon has a Bureau of Land Management visitors center and is home to feral horses, wild burros, bighorn sheep, coyotes and a variety of desert plant life.

[Valley of Fire State Park](#) is only 55 miles (88 kilometers) northwest of Las Vegas and comprises scenic landscapes, hidden canyons and unique red rock formations. Petroglyphs and remains of ancient Native American civilizations can be viewed here and a Nevada Park Service visitors center provides tourist information. The park is open to the public year-round and tours are available.

[Bryce Canyon](#) is located 210 miles (336 kilometers) northeast of Las Vegas in southwestern Utah. This popular national park offers an outdoor exhibition of unique rock formations with imaginative names like Pink Cliffs, Silent City and Cathedral. Bryce Canyon is open throughout the year.

[Mojave National Preserve](#) is only 60 miles (97 kilometers) southwest of Las Vegas. This 1.6-million-acre preserve, which protects one of the most diverse environments in the world, abounds with sand dunes, volcanic cinder cones, Joshua tree forests and mile-high mountains. The preserve's visitor centers, located in Baker and Needles, Calif., welcome visitors year-round.

[Zion Canyon](#), 158 miles (254 kilometers) north of Las Vegas across the Utah border, is a popular winter ski resort. Colorful sandstone canyons, hot rocky deserts and cool forested plateaus are all part of Zion National Park. Zion Canyon is the largest and most visited canyon in the park. Here, the Virgin River has carved a spectacular gorge into the red and white sandstone. The 2,000 to 3,000-foot canyon walls loom high above the river and the tree and grass-covered canyon floor.

Destinations

[Boulder City](#) is just 30 miles (48 kilometers) east of the Las Vegas Strip, on the way to Lake Mead. Built in the '30s for Hoover Dam construction workers' families, it is the site of the historic Boulder Dam Hotel, the only Nevada city that does not allow public gaming. Boulder City's historic Old Town district is home to many quaint shops, several of which feature works by Native American jewelers.

[Rhyolite](#) is a well-preserved ghost town 120 miles (193 kilometers) north of Las Vegas near the small

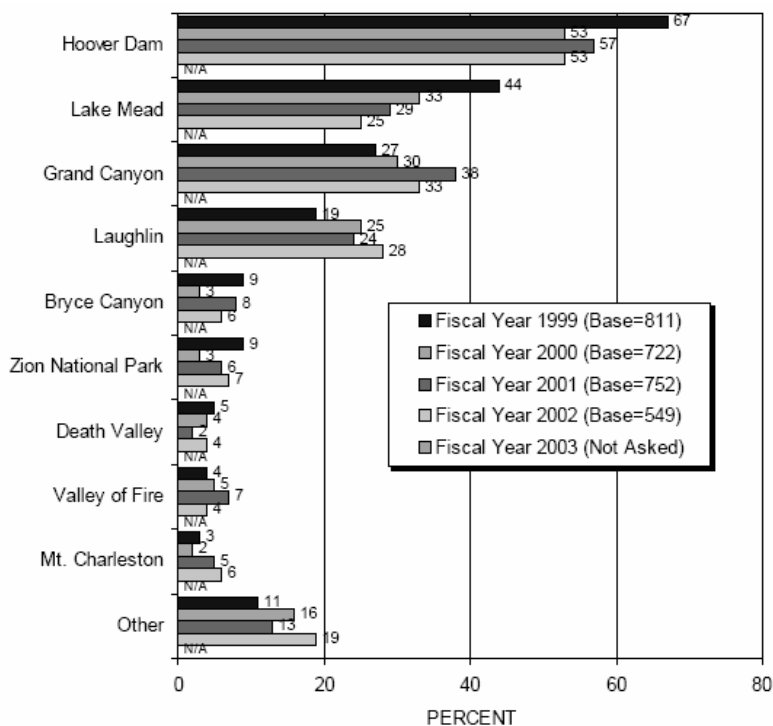
community of Beatty, Nev., which bills itself as the "Gateway to Death Valley." Highlights of the area include ruins of the Potter General Store, Newton's Grille, a school, several major banks, a house made entirely out of bottles and a railroad depot.

Bonnie Springs Ranch/Old Nevada lies about 20 miles (32 kilometers) west of Las Vegas near Red Rock Canyon. Bonnie Springs Ranch was built in the 1840s as a cattle ranch and watering hole. Adjacent to the ranch is Old Nevada, a place where tourists can witness a re-creation of an Old West town complete with gunfights, horseback riding, children's petting zoo and mini-train rides. Bonnie Springs Ranch/Old Nevada is open to the public year-round.

Hoover Dam is an engineering wonder of the world just 35 miles (56 kilometers) southeast of Las Vegas. Formerly named Boulder Dam, this historic man-made creation tamed the mighty Colorado River and created North America's largest man-made lake, Lake Mead. Construction of the 726-foot-high arch-gravity dam that is 660 feet thick at its base, forever changed the face of the western United States. On-site tours of the dam are available to the public throughout the year.

Lake Mead Recreational Area is just 25 miles (40 kilometers) from Las Vegas at its closest point. With more than 550 miles (880 kilometers) of shoreline, Lake Mead Recreational Area offers outdoor enthusiasts year-round opportunities for swimming, water skiing, camping, boating, fishing, tours and cruises.

Spring Mountain State Park is located 30 miles (48 kilometers) west of Las Vegas. This historic ranch was a stopover for travelers on the Mormon and Spanish trails. Once owned by industrialist Howard Hughes, radio personalities Lum and Abner and German munitions heiress Vera Krupp, the Spring Mountain State Park is today the site of seasonal outdoor theater and jazz concerts. The park is open year-round.



** Source: Page 41 GLS Research, Las Vegas Visitor Profile Fiscal Year 2003



Art & Culture in the Desert

For years, Las Vegas has enjoyed its own place in American culture. Elvis, showgirls and neon lights are just some of the pop culture icons associated with the Entertainment Capital of the World.

In recent years, Las Vegas has secured its place on the cultural map. From the highbrow to the kitschy, you can bet on the destination to deliver a well-rounded dose of art and culture.

Unique Las Vegas Culture

Visitors can immerse themselves in the cultural offerings that are unique to Las Vegas and learn more about this gaming capital and its place in history.

For fans of legendary entertainer Liberace, or those just wanting to catch a glimpse of this Las Vegas legend's life, the [Liberace Museum](#) is a must-see. Permanent displays include Liberace's many treasures, such as his extravagant jewelry and costumes, world-famous pianos and his collection of rare automobiles.

Focused on preserving Las Vegas history, the **Neon Museum** is a collection of classic neon signs. Soon to include a freestanding structure that will offer an indoor exhibit area as well, the museum now features an array of vintage neon signs on display downtown at the Fremont Street Experience.

A one-of-a-kind museum devoted to gaming, the **Casino Legends Hall of Fame** located at the Tropicana Hotel and Casino, features the largest collection of gaming, casino and entertainment memorabilia ever assembled.

Elvis lives at the [Elvis-a-Rama Museum](#). Exhibits include more than \$4 million worth of the King's personal belongings, including his signature jumpsuits.

Art for Art's Sake

In 1998, Steve Wynn surprised many when he decided to open an art gallery in his \$1.9 billion hotel-casino, Bellagio. Art critics were skeptical, but the public applauded his efforts when the Bellagio Gallery of Fine Art opened and launched Las Vegas to the forefront of the art scene. With eyes glued to this emerging art center, other reputable art institutions started looking toward Las Vegas. The result: four fine-art galleries located in the resort corridor, featuring revered masterpieces from celebrated artists.

- **The Wynn Collection**, located on the site of the former Desert Inn hotel and casino-to-be Steve Wynn's latest resort offering, Le Rêve, in 2004-displays paintings from his private collection, including masterpieces by Picasso, Cézanne, Van Gogh and Matisse.
- In October 2001, the 7,660 square-foot [Guggenheim Hermitage](#) opened to the public at the Venetian Resort Hotel and Casino. This collaboration marks the first joint venture between the State Hermitage Museum in St. Petersburg, Russia and New York's Solomon R. Guggenheim Foundation.
- The [Bellagio Gallery of Fine Art](#) presents traveling art exhibitions from around the world.

Fine art, however, did not appear on the Las Vegas Strip overnight. Many smaller galleries have been thriving at locations off the beaten path for many years.

- A little-known jewel in the desert, the **Las Vegas Art Museum** is now getting its due as southern Nevada's art scene grows in leaps and bounds. Located approximately 10 miles west of the Las Vegas Strip, the museum is affiliated with the Smithsonian Institution and houses international touring exhibitions. Works by Salvador Dali, Alexander Calder and other acclaimed artists are included in the museum's permanent collection.
- Art and photography from nationally and internationally recognized artists, students and faculty alike are exhibited at the University of Nevada, Las Vegas' [Donna Beam Fine Art Gallery](#).
- The [Arts Factory](#) in downtown Las Vegas houses several artists' studios and contemporary art galleries. "Dust" is the most recent addition to the Arts Factory lineup; its stable of artists includes several of the area's emerging up-and-comers and has become the favorite of serious art collectors in Las Vegas.
- During [First Fridays](#) in the Arts District, Las Vegas' historic downtown neighborhood draws hundreds of visitors who come to see visual and performing artists, patronize arts-oriented businesses and enjoy the area's unique shops, bars and restaurants.

Cultural Events

Those who claim there is no culture in Las Vegas need look no farther than the University of Nevada, Las Vegas (UNLV). Each year, UNLV features theatre productions, musicals, art exhibits, jazz, classical and chamber music concerts, ballets, opera, lectures, dances and other worldly entertainment.

The campus' performing arts venues, such as the Judy Bayley Theatre, Artemus Ham Concert Hall and the Black Box Theatre, feature entertainment of all kinds, including performances by the acclaimed Nevada Ballet Theatre, the Las Vegas Philharmonic and world-renowned musicians. Some of the ongoing series include The Charles Vanda Master Series, showcasing the best in classical music and dance, The Best of the New York Stage, featuring acclaimed Broadway, cabaret and jazz performers and The World Stage, devoted to international music and dance.

Theatre All Around

Las Vegas is making a name for itself as a place to see great theater. High profile, star-powered shows and touring musical productions continue to make stops in Las Vegas, where they play to packed houses.

Many of the performances on the Las Vegas Strip are among the best and most innovative in the world, from the internationally acclaimed [Cirque du Soleil](#) and [Blue Man Group](#) to Las Vegas icons Siegfried & Roy.

The Las Vegas musical theater scene benefits from the presence of the Aladdin Theater for the Performing Arts. Remodeled during the construction of the new Aladdin resort, the 7,000-seat performing arts center is the Strip's only mid-sized entertainment venue and is home to cultural and popular entertainment including national tours of highly acclaimed Broadway musicals.

Community theatre has also received attention from southern Nevada's residents and visitors alike. Groups such as the [Las Vegas Little Theatre](#), the local summer stock company, [Super Summer Theatre](#) and the Rainbow Company, in addition to local academic institutions, [UNLV](#) and [Community College of Southern Nevada](#), present plays and musical productions featuring local and up-and-coming talent. [The City of Las Vegas](#) also has a comprehensive cultural arts program with events scheduled throughout the year.