

Summary Report visit to University of California, Berkeley

by

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Visiting Fulbright Scholar, UC Berkeley.*

April 1, 2000 - June 30, 2000

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Activities

Literature surveys

Literature surveys of several areas of interest were prepared. Areas were chosen taking into consideration current and likely future activities at the *Universidade do Porto*, Portugal, in teaching, research and consulting. Reasons for the choice of areas included:

- a European r&d project on aging aircraft was concluded in 1999 (BRITE BE95-1053), and a new, related proposal (GRD1-2000-25069) is currently under consideration in the European Commission, Brussels;
- a European r&d project on fatigue crack propagation on steel for rails for railways was concluded in 2000 (SMT4-CT98-2240);
- a r&d proposal on adhesive connections (PCTI/1999EME35975) was recently submitted to the *Fundação para a Ciência e Tecnologia – FCT* (a Portuguese government agency for financing r&d activities);
- a PhD thesis on diffusion bonding (BD3388/94) is reaching its conclusion;
- research on composites structures, including interlaminar fracture toughness;
- consulting on aging steel structures, including bridges.

Other current areas of interest include

- new product development, and terminology and machine translation (justified by the launching in 2000 of MSc programs on industrial design (together with ESAD-Porto), and on technical terminology and translation (an initiative of the Faculty for Humanities - *Faculdade de Letras da Universidade do Porto*);
- professional ethics, with current membership of the ASME (American Society of Mechanical Engineers) Board on Professional Practice and Ethics.

In list form, topics surveyed were:

- Structural integrity
 - Aging aircraft (*bem* and *fem* stress analysis; fatigue crack propagation; multiple site damage; residual strength; equivalent initial flaw size concepts;)
 - Concrete structures (retrofit; use of composite materials; pultruded rebar reinforcements)
 - Steel structures (connections; bridges)
- Adhesive connections
- Materials
 - Diffusion bonding
 - Fatigue (short crack behaviour;)
 - Emerging materials (foams,)
 - Composites damage (interlaminar toughness; impact behaviour,)
- Design
 - Mechanical and engineering design
 - Industrial design
- New product development
- Management of technology
- Professional ethics
- Terminology (technical translation, machine translation, etc.)

The papers obtained correspond to approximately 1.9 Gbytes of information downloaded from the University of California Digital Library (www.cdlib.org).

Discussions and consultations

Among others, on:

- *Visit of Hari Dharan to the Universidade do Porto in September – December 2000* was discussed and prepared.
- *Fracture Mechanics and structural integrity* – contacts and discussions with A Mal, C K H Dharan, I Finnie, R Ritchie et al. took place; relationship manufacture procedure/fatigue behaviour was discussed with D Dornfeld.
- *Universities management* – with Loris Davanzo, on UCB planning activities and planning support services;
- *Faculty development* – with Steve Tollefson, on recognition of exceptional performance in teaching at a research university - the ‘Distinguished Teaching Award’ program of the Committee on Teaching, Berkeley Division of the Academic Senate, University of California;
- *Educational technology* – with Janio Itiro Akamatsu and Alice Agogino; the possibility of involvement of the *Universidade do Porto*, Portugal, on a educational technology research project recently submitted to NSF and Brazilian authorities (*Projeto Edital ProTeM-CC/NSF 02/99*) will be analysed;

Seminar presentation

A seminar was presented at the UCB Mechanical Engineering Department the 15th June, well attended by academic staff and graduate students. The seminar information flyer is attached as Annex 1.

Short course

A short course of the American Society of Mechanical Engineers – ASME Professional Development Program was attended in New York city, June 5-7, 2000: *‘The art of project management for engineers’* (instructor: David Adkins, PhD, Business Management Consultants, Ventura, California). A copy of the certificate is attached as Annex 2.

Paper submission

A paper based on work carried out in Porto was finished at the UCB, and submitted for possible presentation at the ASME International Mechanical Engineering Congress, Orlando, USA, Nov. 5-10, 2000.

Other activities

A working draft of new departmental rules for the *Departamento de Engenharia Mecânica e Gestão Industrial, Faculdade de Engenharia da Universidade do Porto*, Portugal, was prepared at the request of the department’s Chairman.

Visits to Porto, Portugal, in the period

During the three-months stay at Berkeley (March 31, 2000 to June 30, 2000) two one-week visits to Porto, Portugal, took place as planned. The respective dates were:

- First visit: April 25 – May 2;
- Second visit: May 25 – June 2.

People

Contacts, discussions or consultations with the following (among others) took place:

- *Ajit Mal* (Professor, Mechanical and Aerospace Engineering Department, University of California, Los Angeles, and Visiting Scholar, University of California, Berkeley)
- *Alice M Agogino* (UCB Roscoe and Elizabeth Hughes Chair of Mechanical Engineering, and Faculty Assistant to Executive Vice Chancellor Carol Christ: Educational Development and Technology)
- *C K Hari Dharan* (Professor, UCB Mechanical Engineering Department)
- *Carlos A Gomes* (graduate of Universidade do Porto, Portugal; ICEP trainee at Hibbitt, Karlsson & Sorensen (West) Inc, California)
- *David A Dornfeld* (Professor and Director, Engineering Systems Research Center, UCB Department of Mechanical Engineering)
- *David E Adkins* (Principal Consultant, Business Management Consultants, Ventura, California)
- *Emanuel Almeida* (graduate of Universidade do Porto, Portugal; Mechanical Engineering MSc student, Stanford University)
- *Frank E Hauser* (Professor Emeritus, UCB Department of Mechanical Engineering);
- *Iain Finnie* (The James Fife Chair Professor Emeritus, UCB Department of Mechanical Engineering)
- *J Miguel Villas-Boas* (Associate Professor, UCB Haas School of Business)
- *Janio Itiro Akamatsu* (Professor, Department of Electrical Engineering, UNESP, Guaratinguetá campus, Brasil)
- *José Ferreira Dias* (Managing Director and Trade Commissioner, ICEP – Investimentos, Comércio e Turismo de Portugal, San Francisco)
- *Loris P Davanzo* (Assistant Director, Planning and Analysis, UCB Office of the Chancellor)
- *Mel Kanninen* (MFK Consulting Services, San Antonio, Texas)
- *Nuno Rebelo* (Hibbitt, Karlsson & Sorensen (West) Inc, California)
- *Pedro Pereira* (graduate of Universidade do Porto, Portugal; ICEP trainee at CISCO, California)
- *Robert N Peirce* (Counsellor, British Embassy, Washington DC)
- *Robert O Ritchie* (Professor, UCB Department of Materials Science and Mineral Engineering)
- *Steve Tollefson* (UCB Office of the Assistant Vice Chancellor, Student Life: Educational Development. Coordinator: Faculty Development)

Fulbright Program staff or related

- *Marilyn N Herand* (Fulbright Visiting Scholar Enrichment Program, Institute of International Education, San Francisco Area Program Coordinator)
- *Rita Bacelar* (Fulbright Program Coordinator, Comissão Cultural Luso-Americana, Lisbon, Portugal)
- *Sone Loh* (Senior Program Coordinator, Visiting Scholar Division, Council for International Exchange of Scholars – CIES, Washington DC)

Administrative support at UCB

- *Ada O Carty* (Administrative Assistant, UCB Mechanical Engineering Department)
- *Rebecca Margosian* (Visiting Scholar Program Coordinator, UCB Department of Mechanical Engineering)

Events: conferences, lectures, seminars, etc.

- 1) April 6, 2000, Conference sponsored by the Berkeley Center for Law and Technology, Berkeley Technology Law Journal, et al., University of California, Berkeley (UCB) Boalt Hall School of Law, Berkeley – *'Music to whose ears? The debate over digital music'*; speakers: Peter Menell (Professor, UCB Boalt Hall School of Law), Chuck D (Rapstation.com) et al.
- 2) April 6, 2000, Fulbright Visiting Scholars Enrichment Program, *'The US Presidential Elections of 2000'*, Bruce Cain (UCB Professor of Political Science, Director of the UCB Institute of Governmental Studies)
- 3) April 10, 2000, Conference cosponsored by the UCB Institute of Governmental Studies (IGS) and American University Center for Congressional and Presidential Studies *'e-Campaigning: Ethics and the Internet'*; speakers: Bill Jones (California Secretary of State), Peter Lyman (Professor, UCB School of Information Management and Systems) et al.
- 4) April 10, 2000, UCB Electrical Engineering and Computer Sciences Department seminar: *'Bridging search engines and databases'* Roy Goldman (Stanford University), Soda Hall
- 5) April 10, 2000, Symposium *'What about economic rights: a symposium on wealth, poverty and the human rights legacy'*, UCB International House Auditorium; speakers: Laurel Fletcher (UCB Boalt Law School and UCB International Human Rights Clinic), Charles Henry (UCB African American Studies), Cheri Honkala (Director, Kensington Welfare Rights Union), Anuradha Mittal (Policy Director, Food First) et al.
- 6) April 11, 2000, Panel *'The future of the professoriate: a report from the Harvard project on faculty appointments'*, UCB Faculty Club; speakers: Richard Cheit (Harvard School of Education), Robert Post (Professor, UCB Boalt School of Law and Chair, American Association of University Professors) et al.
- 7) April 11, 2000, UCB Graduate Council of the Academic Senate lecture: *'Cities in civilization: culture, innovation and urban order'*, by Sir Peter Hall (Chair of Planning at the Bartlett School of Planning, University College, London)

- 8) April 11, 2000, UCB Avenali Lectures, '*The end of nature as a way to organize our polity*' (first of a two lecture series – '*Politics of nature*'), speaker: Bruno Latour (Professor, *Centre de Sociologie de l'Innovation, Ecole des Mines de Paris*)
- 9) April 12, 2000, UCB Depart of Mechanical Engineering seminar '*Structural health monitoring of aging aircraft*'; speaker: Ajit Mall (Professor, Mechanical and Aerospace Engineering Department, University of California, Los Angeles)
- 10) April 12, 2000, UCB Engineering Alumni Society and Engineers' Joint Council panel '*Anatomy of a startup*', speakers from venture capital funds and CEOs of startup companies
- 11) April 13, 2000, UCB Institute of International Studies, The Rockefeller Foundation Communities in Crisis Lecture Series: '*Justice, tolerance and accountability in South Africa*', speaker: Albie Sachs (Justice of the Constitutional Court of South Africa)
- 12) April 13, 2000, UCB 8th Annual Lecture on Energy and the Environment, '*Cogs and wheels aren't enough: conserving biodiversity in the 21st century*', speaker: Deborah Jensen (Vice President, The Nature Conservancy)
- 13) April 14, 2000, UCB Center for Studies in Higher Education lecture '*Teaching Physics at a distance*', Jocelyn Burnell (Open University, UK), CSHE Library, South Hall Annex
- 14) April 15, 2000, '*Mechanical Engineering - the program*', speaker: Arun Majumdar (UCB Depart. of Mech. Engineering Associate Professor and Vice-Chairman – Instruction) et al., UCB Northgate Hall (part of Cal Day 2000)
- 15) April 15, 2000, Panel '*Commemorating the 25 years of the student regent position*'; speakers: David Saxon (former UC President) et al. (part of Cal Day 2000)
- 16) April 17, 2000, UCB Institute of International Studies panel: '*Controlling nuclear weapons: where are we*', UCB Alumni House; panellists: Alan Cranston (former US Senator), Michael Nacht (Dean, UCB Richard and Rhoda Goldman School of Public Policy), Wolfgang Panofsky (Director Emeritus, Stanford Linear Accelerator Center) et al.
- 17) April 17, 2000, UCB School of Social Welfare, Friedlander Lecture '*Privatising social security – an international perspective*'; speaker: Dalmar Hoskins (Secretary General, International Social Securities Association)
- 18) April 17-18, 2000, Berkeley-Yomiuri Conference '*Envisioning a triangular relationship in the pacific: China, Japan and the US at the millennium*'; speakers: Walter Mondale (former US Vice-President and Ambassador to Japan), James Sasser (former US Senator and Ambassador to PRChina), Peter Tarnoff (former US Under Secretary of State for Political Affairs, lecturer UCB) et al.
- 19) April 18, 2000, UCB Center for Slavic and East European Studies lecture '*A case of post-communist bewilderment: culture, media and culture politics in Hungary*'; speaker: Balint Rozsnyai
- 20) April 18, 2000, UCB Townsend Center for the Humanities, and the Commonwealth Club of California, panel '*Immigration issues and the new right in Europe*'; speakers: Richard Mitten (Associate Professor of History, Central European University, Budapest), Richard Webster (Professor Emeritus of Contemporary Italian History, UCB), et al.

- 21) April 18, 2000, UCB Avenali Lectures, '*Bringing the sciences into democracy*' (second of a two lecture series – '*Politics of nature*'), speaker: Bruno Latour (Professor, *Centre de Sociologie de l'Innovation, Ecole des Mines de Paris*)
- 22) April 19, 2000, UCB Depart of Mechanical Engineering seminar '*Fracture Mechanics and the nation's aging aircraft problem*'; speaker: Melvin Kanninen (engineering consultant, San Antonio, Texas, former research scientist, Southwest Research Institute)
- 23) April 20, 2000, UCB Institute of International Studies, The Rockefeller Foundation Communities in Crisis Lecture Series: '*Swallowing injustice to rebuild community: Latin America after the era of state terror*', speaker: Thomas Farer (Dean, Graduate School of International Affairs, University of Denver, member Inter-American Commission on Human Rights 1976-83)
- 24) April 20, 2000, UCB, The Bancroft Library roundtable: '*Envoys of the empire: California engineers and the common world destiny*', speaker: Bancroft fellow Jessica Teisch
- 25) April 21, 2000, UCB *Undergraduate Symposium on Ethics and Research*; speakers: Deni Elliot (Professor of Ethics and Director of the Practical Ethics Center, University of Montana) et al.
- 26) April 24, 2000, UCB Institute of Governmental Studies, UCExtension, New York Times and the Berkeley Alumni Association, '*The annual review of the presidency*', panellists: Laura Capps (former speechwriter for President Clinton), Thomas Mann (The Brookings Institution), Nelson Polsby (UCB Department of Political Science), Richard Berke (New York Times), et al.
- 27) May 4, 2000, UCB, California Association of Scholars (an affiliate of the National Association of Scholars), lecture by Alan Charles Kors (University of Pennsylvania Professor of History, coauthor '*The Shadow University: the Betrayal of Liberty at American Campuses*' and President, Fire: Foundation for Individual Rights in Education Inc)
- 28) May 4, 2000, The 6th Annual Aaron Wildavsky Forum for Public Policy, UCB Richard and Rhoda Goldman School of Public Policy: '*Competing models of the human agent: implications for policy making*'; speaker: Daniel Kahneman (Eugene Higgins Professor of Psychology, Princeton University)
- 29) May 5, 2000, UCB IGS Lecture: '*Modern Britain: an examination of devolution and the revitalization of Britain's external relationships – Europe, US and the Commonwealth*'; speaker: Robert Peirce (Counsellor, British Embassy, Washington DC)
- 30) May 8, 2000, Symposium '*After Seattle: politics, trade and culture in the new North America*', UCB Boalt School of Law, Canadian Studies Program; speakers: Michael Hawes (Professor, Queen's University), Vinod Aggarwal (UCB), John Wirth (Stanford University) et al.
- 31) May 9, 2000, UCB School of Social Welfare lecture '*Wealth, Poverty and Alan Greenspan: Social policy and macro economic policy*'; speaker: Robert Reich (Maurice B Hexter Professor of Social and Economic Policy, Brandeis University, and former US Secretary of Labor)
- 32) May 10, 2000, UCB, Panel '*Making large lectures seem small through the use of technology*'; speakers: Alice Agogino (Professor, UCB Depart of Mechanical Engineering) et al.

- 33) May 14, 2000, Fulbright Visiting Scholar Enrichment Program, Yerba Buena Gardens, Visual Arts Gallery
- 34) May 17, 2000, Scholar information meeting, organised by University of California SISS – Services for International Students and Scholars, International House
- 35) June 3-4, 2000, American Society of Mechanical Engineers, Board on Professional Practice and Ethics - BPPE meeting, Providence, Rhode Island
- 36) June 5-7, 2000, American Society of Mechanical Engineers – ASME Professional Development Program '*The art of project management for engineers*'; instructor: David Adkins, PhD, Business Management Consultants. New York city
- 37) June 13-14, 2000, '*eBusiness Conference and Expo*', San Jose Convention Center, San Jose
- 38) June 15, 2000, UCB Depart of Mechanical Engineering seminar '*Multiple site fatigue damage in aircraft*'; speaker: Paulo M S T de Castro (Professor, *Departamento de Engenharia Mecânica e Gestão Industrial, Universidade do Porto*)
- 39) June 18, 2000, Moscone Center, San Francisco: exhibition of NEXPO2000, Newspaper Association of America

Fracture Mechanics Seminar

University of California, Berkeley
Department of Mechanical Engineering

Presents

“Multiple-Site Fatigue Damage in Aircraft”

By

Paulo M.S.T. de Castro
Department of Mechanical Engineering and Industrial
Management
University of Porto, Portugal

Thursday, June 15, 2000
6153 Etcheverry Hall
4:00 pm
(Coffee & Cookies served at 3:30 pm)

ABSTRACT

This seminar concerns fatigue processes in aircraft structures and is related to the recent seminars in the department on aging aircraft, a subject by Professor Ajit Mal and Dr. Melvin Kanninen. The work to be presented here, conducted by the University of Porto, Portugal for a project on the fatigue behavior of aging aircraft, was funded by the European Union (project leader: DASA/Airbus). It concerns the multiple-site damage phenomenon exemplified by the behavior of 2024-T3 clad aluminum riveted lap-joints, a common design feature in aircraft structures.

The study involves fatigue testing under constant amplitude loading of 1.6-mm-thick riveted lap-joints, and includes examination of the specimens during and subsequent to testing (post-mortem analysis of the fracture surface using scanning electron microscopy) in order to determine the time of occurrence, location and extent of fatigue damage. Crack growth rates were determined from periodic crack length measurements with a traveling microscope. Stress measurements were made using extensometry and the SPATE infrared technique to determine loading distribution on the lap-joints and redistribution due to cracking of fastener holes. Data on the initiation and growth of cracks and on residual static strength was used to assess the predictive model based on the finite element method.

Hosted by Professor David Dornfeld, 5100A Etcheverry Hall, (510) 642-0906, dornfeld@me.berkeley.edu & by Professor Hari Dharan, 5135 Etcheverry Hall, (510) 642-4933, dharan@me.berkeley.edu

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PAULO DE CASTRO, PH.D.

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**THE ART OF PROJECT MANAGEMENT
FOR ENGINEERS**

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Professional Development

ANNEX 2

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Annex 3

Education

- April 11, 2000, Panel *'The future of the professoriate: a report from the Harvard project on faculty appointments'*, UCB Faculty Club; speakers: Richard Cheit (Harvard School of Education), Robert Post (Professor, UCB Boalt School of Law and Chair, American Association of University Professors) et al.
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Ethics

- April 10, 2000, Symposium *'What about economic rights: a symposium on wealth, poverty and the human rights legacy'*, UCB International House Auditorium; speakers: Laurel Fletcher (UCB Boalt Law School and UCB International Human Rights Clinic), Charles Henry (UCB African American Studies), Cheri Honkala (Director, Kensington Welfare Rights Union), Anuradha Mittal (Policy Director, Food First) et al.
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Exhibitions

- San Francisco Museum of Modern Art – SFMOMA: René Magritte exhibition; Sol Lewitt retrospective; San Francisco, May 6, 2000
- Yerba Buena Center for the Arts, San Francisco, May 14, 2000
- Corbis – The Bettmann Archive ‘The living lens’, Metreon, San Francisco, May 14, 2000
- 17th Himalayan Fair, Live Oak Park, Berkeley, May 20, 2000
- Photo Exhibit by Horst Hamann, Vanderbilt Hall, Grand Central Terminal, New York city, June 7, 2000
- 6th Biennial Berkeley Festival and Exhibition; exhibition - UCB King Student Union Building, June 11, 2000
- California Academy of Sciences, San Francisco, June 18, 2000
- ‘The Golden Age of Chinese Archaeology’, Asian Art Museum, San Francisco, June 25, 2000

Fulbright activities

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Music

- April 5, 2000, UCB Department of Music noon concert, Jolie Lin, piano solo. UCB Hertz Hall
- April 9, 2000, Midsummer Mozart Chamber Players. Old First Church, Sacramento and Van Ness, San Francisco
- April 12, 2000, UCB Department of Music noon concert, Ivan Ilic; Yi-Fang Tsai; Brian Christian. UCB Hertz Hall
- April 15, 2000, UCB University Symphony Orchestra, David Milnes, conductor. UCB Hertz Hall (part of the Cal Day 2000)
- April 15, 2000, University Chorus; Mozart: Requiem. UCB Hertz Hall
- April 19, 2000, UCB Department of Music noon concert, Yong-In University Art Troup, Korea. UCB Hertz Hall
- May 3, 2000, pianist Jolie Lin. UCB Hertz Hall
- May 7, 2000, UC Davis Concert Band and UC Berkeley Wind Ensemble. UCB Hertz Hall
- May 12, 2000, Oakland East Bay Symphony, Michael Morgan, Director. Paramount Theatre, Oakland
- May 13, 2000, The Berkeley Community Chorus and Orchestra, Arlene Sagan, Director; J S Bach Mass in B Minor. St Joseph the Worker Church, Berkeley
- June 10, 2000, San Francisco Symphony, San Francisco Symphony Chorus. San Francisco Davies Symphony Hall

Philosophy, Psychology

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Sociology, Politics, etc.

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- April 13, 2000, UCB Institute of International Studies, The Rockefeller Foundation Communities in Crisis Lecture Series: *'Justice, tolerance and accountability in South Africa'*, speaker: Albie Sachs (Justice of the Constitutional Court of South Africa)
- April 13, 2000, UCB 8th Annual Lecture on Energy and the Environment, *'Cogs and wheels aren't enough: conserving biodiversity in the 21st century'*, speaker: Deborah Jensen (Vice President, The Nature Conservancy)
- April 17, 2000, UCB Institute of International Studies panel: *'Controlling nuclear weapons: where are we'*, UCB Alumni House; panellists: Alan Cranston (former US Senator), Michael Nacht (Dean, UCB Richard and Rhoda Goldman School of Public Policy), Wolfgang Panofsky (Director Emeritus, Stanford Linear Accelerator Center) et al.
- April 17, 2000, UCB School of Social Welfare, Friedlander Lecture *'Privatising social security – an international perspective'*; speaker: Dalmar Hoskins (Secretary General, International Social Securities Association)
- April 17-18, 2000, Berkeley-Yomiuri Conference *'Envisioning a triangular relationship in the pacific: China, Japan and the US at the millennium'*; speakers: Walter Mondale (former US Vice-President and Ambassador to Japan), James Sasser (former US Senator and Ambassador to PRChina), Peter Tarnoff (former US Under Secretary of State for Political Affairs, lecturer UCB) et al.
- April 18, 2000, UCB Center for Slavic and East European Studies lecture *'A case of post-communist bewilderment: culture, media and culture politics in Hungary'*; speaker: Balint Rozsnyai
- April 18, 2000, UCB Townsend Center for the Humanities, and the Commonwealth Club of California, panel *'Immigration issues and the new right in Europe'*; speakers: Richard Mitten (Associate Professor of History, Central European University, Budapest), Richard Webster (Professor Emeritus of Contemporary Italian History, UCB), et al.
- April 20, 2000, UCB Institute of International Studies, The Rockefeller Foundation Communities in Crisis Lecture Series: *'Swallowing injustice to rebuild community: Latin America after the era of state terror'*, speaker: Thomas Farer (Dean, Graduate School of International Affairs, University of Denver, member Inter-American Commission on Human Rights 1976-83)
- April 24, 2000, UCB Institute of Governmental Studies, UCExtension, New York Times and the Berkeley Alumni Association, *'The annual review of the presidency'*, panellists: Laura Capps (former speechwriter for President Clinton), Thomas Mann (The Brookings Institution), Nelson Polsby (UCB Department of Political Science), Richard Berke (New York Times), et al.
- May 4, 2000, UCB, California Association of Scholars (an affiliate of the National Association of Scholars), lecture by Alan Charles Kors (University of Pennsylvania Professor of History, coauthor *'The Shadow University: the Betrayal of Liberty at American Campuses'* and President, Fire: Foundation for Individual Rights in Education Inc)
- May 4, 2000, The 6th Annual Aaron Wildavsky Forum for Public Policy, UCB Richard and Rhoda Goldman School of Public Policy: *'Competing models of the human agent: implications for policy making'*; speaker: Daniel Kahneman (Eugene Higgins Professor of Psychology, Princeton University)
- May 5, 2000, UCB IGS Lecture: *'Modern Britain: an examination of devolution and the revitalization of Britain's external relationships – Europe, US and the Commonwealth'*; speaker: Robert Peirce (Counsellor, British Embassy, Washington DC)
- May 8, 2000, Symposium *'After Seattle: politics, trade and culture in the new North America'*, UCB Boalt School of Law, Canadian Studies Program; speakers: Michael Hawes (Professor, Queen's University), Vinod Aggarwal (UCB), John Wirth (Stanford University) et al.
- May 9, 2000, UCB School of Social Welfare lecture *'Wealth, Poverty and Alan Greenspan: Social policy and macro economic policy'*; speaker: Robert Reich (Maurice B Hexter Professor of Social and Economic Policy, Brandeis University, and former US Secretary of Labor)

CIES	_____
USIA	_____
P/C	_____
DB	_____

CIES USE ONLY	Revised 12/98
Fiscal Year/Serial #	_____/____

Date of Report
7/6/2000
 Month Day Year

**APPENDIX N
 VISITING SCHOLAR FINAL REPORT
 FULBRIGHT SCHOLAR PROGRAM**

Please fill out this final report during the last few weeks of your grant period. Your report is very important to us. It will be used to evaluate and improve the quality of the Fulbright Program and to assist future grantees. It will be shared with Fulbright commissions, USIS posts abroad, USIA in Washington, and others, as appropriate. Please send three copies to

Council for International Exchange of Scholars
 Attn: Visiting Scholar Program
 3007 Tilden Street, NW, Suite 5L
 Washington, DC 20008-3009

PART I. BACKGROUND

A. Visiting Scholar Profile

1. Name DE CASTRO PAULO M.S.T.
 Family name First name Middle name

2. Home institution
FACULDADE DE ENGENHARIA, UNIVERSIDADE DO PORTO
 Name
DEPARTAMENTO DE ENGENHARIA MECANICA E GESTÃO
 Department
PORTO PORTUGAL INDUSTRIAL
 City Country

3. What was your principal host institution(s) in the United States?

Name(s) of institution(s) City State
 a) UNIV. OF CALIFORNIA BERKELEY CA
 b) _____

4. Your project title (please print) CONTRIBUTION TO THE INTEGRATION OF
 FRACTURE MECHANICS CONCEPTS IN MANUFACTURING
 TECHNOLOGIES

5. For the following degrees that you have earned, please circle to indicate where the degrees were earned.

	<u>Home Country</u>	<u>United States</u>	<u>Another Country</u>	<u>Not applicable</u>
a) Doctorate (Ph.D., Ed.D., or equivalent)	1	2	3	n.a.
b) Master's (M.A., M.S., M.F.A., or equivalent)	1	2	3	n.a.
c) Bachelor's (B.A., B.S., or equivalent)	1	2	3	n.a.
d) Law (L.L.B., J.D., or equivalent)	1	2	3	n.a.
e) Medicine, Dentistry, Veterinary Medicine	1	2	3	n.a.
f) Other degree _____	1	2	3	n.a.

6. a) During the period of your grant, were you accompanied by a spouse and/or children? 1 No 2 Yes

If "Yes," please circle the response corresponding to the period of time your spouse/children accompanied you.

	<u>Less than 50% of the grant period</u>	<u>50% to 70% of the grant period</u>	<u>80% or more of the grant period</u>
b) Spouse	1	2	3
c) Child(ren)	1	2	3

7. a) Did you visit the United States for any reason prior to your current grant? 1 No 2 Yes

b) If "No," go to question 8. If "Yes," approximately how many times? 6+ TIMES

Were any of the following your reasons for previous visits?

- c) Visited family and friends/tourism/vacation 1 No 2 Yes
- d) Attended a professional meeting or conference 1 No 2 Yes
- e) Enrolled as a student 1 No 2 Yes
- f) Conducted research/lectured 1 No 2 Yes
- g) Traveled on visit or for business 1 No 2 Yes
- h) Other 1 No 2 Yes

8. a) Did you request affiliation at a specific institution regarding your current Fulbright grant? 1 No 2 Yes

If "Yes," were any of the following your reasons for making that request?

- b) Reputation of an individual/department/center/institution 1 No 2 Yes
- c) Previous or ongoing research collaboration 1 No 2 Yes
- d) Exchange agreement between our institutions 1 No 2 Yes
- e) Suggestion from a colleague 1 No 2 Yes
- f) A member of that institution had visited my institution 1 No 2 Yes
- g) Family and/or friends living nearby 1 No 2 Yes
- h) Other 1 No 2 Yes

B. Award Description

1. What percentage of your time was spent on lecturing and/or research? Please circle the number below the most accurate percentages.

<u>100% lecturing</u>	<u>75% lecturing 25% research</u>	<u>50% lecturing 50% research</u>	<u>25% lecturing 75% research</u>	<u>100% research</u>
1	2	3	4	5

2. a) In addition to your Fulbright award, did you receive financial or in-kind support from any other source? 1 No 2 Yes

If "Yes," did you receive financial support from the following sources?

- b) Host institution in the United States 1 No 2 Yes
- c) Home ~~government of~~ university (NORMAL SALARY PAID) 1 No 2 Yes
- d) Private source 1 No 2 Yes
- e) Personal savings to supplement your grant 1 No 2 Yes
- f) Other _____ 1 No 2 Yes

3. a) Did you receive an extension to your initial grant? 1 No 2 Yes
 b) If "Yes," how long was your extension? _____ MONTHS

Was your extension funded by the following sources?

- c) Fulbright award 1 No 2 Yes
- d) Host institution 1 No 2 Yes
- e) Home government or university 1 No 2 Yes
- f) A private source 1 No 2 Yes
- g) Personal savings 1 No 2 Yes
- h) Other _____ 1 No 2 Yes

C. Places You Visited During the Period of Your Grant

1. What is the total number of out-of-town trips that you have taken to other academic institutions during your grant period? Please provide a breakdown of the number of trips for the following three categories:

- _____ For research/consultation only 1 - PORTO, PORTUGAL
 - _____ For lecturing/giving a presentation only APRIL 25 - MAY 2
 - _____ For research/consultation and lecturing/presentation 2 - PORTO, PORTUGAL
 - _____ Total trips (SEE ATTACHED REPORT) MAY 24 - JUNE 2
 - _____ 3 - PROVIDENCE (ASME)
 - _____ JUNE 3-4
2. Did you receive travel funds from CIES for any of these trips? 1 No 2 Yes
- _____ 4 - NEW YORK CITY (ASME)
 - _____ JUNE 5-7
 - _____ 5 - SAN JOSE (CONF. & EXPO)
 - _____ PART II. EVALUATION
 - _____ JUNE 13

A. Professional Program

1. In your original application for a Fulbright award, you proposed carrying out several activities. Please circle the number that corresponds to how many of these activities you were able to accomplish.

- None or almost none Some About half Most All or almost all
 1 2 3 4 5

2. In Column A indicate each activity that was an activity you *had planned* to accomplish during your Fulbright award. For items marked "Yes" in Column A, indicate in Column B how fully this activity was accomplished during your grant.

	Column A		Column B			
	Was this planned?		If yes, how fully was this accomplished?			
	1 No	2 Yes	Not at all	Somewhat	Mostly	Completely
a) Conduct library research	1 No	2 Yes	1	2	3	4
b) Collaborate on research	1 No	2 Yes	1	2	3	4
c) Conduct interviews/consult/discuss issues	1 No	2 Yes	1	2	3	4
d) Collect data/conduct experimen or fieldwork	1 No	2 Yes	1	2	3	4
e) Analyze data	1 No	2 Yes	1	2	3	4
f) Write up results	1 No	2 Yes	1	2	3	4
g) Give a lecture/seminar	1 No	2 Yes	1	2	3	4
h) Contribute to new courses or curriculum	1 No	2 Yes	1	2	3	4
i) Teach a course	1 No	2 Yes	1	2	3	4
j) Advise students/serve as a committee member	1 No	2 Yes	1	2	3	4
k) Present at a conference	1 No	2 Yes	1	2	3	4
l) Have paper accepted for publication SUBMITTED	1 No	2 Yes	1	2	3	4
m) Other _____	1 No	2 Yes	1	2	3	4

3. Please indicate to what extent these factors helped or hindered—that is, made it easier or harder—to carry out your *research/lecturing* program.

	Hindered a lot	Hindered somewhat	Made no difference	Helped somewhat	Helped a lot
a) Your faculty associate	1	2	3	4	5
b) Other colleagues at host institution	1	2	3	4	5
c) Library resources	1	2	3	4	5
d) Access to computer facilities	1	2	3	4	5
e) Access to other research facilities	1	2	3	4	5
f) Your research skills and/or educational background	1	2	3	4	5
g) Your own preparation for research	1	2	3	4	5
h) Knowledge of English	1	2	3	4	5
i) Amount of stipend	1	2	3	4	5
j) Length of grant	1	2	3	4	5
k) Health/illness	1	2	3	4	5
l) Program administration in the U.S. (CIES)	1	2	3	4	5
m) The <i>Guide for Visiting Fulbright Scholars</i> and other materials provided by CIES	1	2	3	4	5
n) Other _____	1	2	3	4	5

4. Although you may or may not have completed all of your project goals, please indicate your overall evaluation of how satisfied you are with what you did accomplish. Circle one.

Not at all satisfied Not very satisfied Satisfied Mostly satisfied Completely satisfied
 1 2 3 4 5

B. Meeting the Overall Goals of the Fulbright Program

1. Apart from your own professional goals, the Fulbright Program has the goal of *promoting mutual understanding* between the peoples of the United States and other countries. Please indicate to what extent this overall goal was realized.

Not at all Not very much Somewhat Largely Completely
 1 2 3 4 5

2. In your experience, how much effect did the following have on *promoting mutual understanding*? (Please circle one response for each item.)

	<u>Hindered a lot</u>	<u>Hindered some</u>	<u>Made no difference</u>	<u>Helped some</u>	<u>Helped A lot</u>	<u>Not applicable</u>
a) Attending places of worship	1	2	3	4	5	n.a.
b) Involvement in a cultural festival, fair, art show, etc.	1	2	3	4	5	n.a.
c) Spending holidays with Americans	1	2	3	4	5	n.a.
d) Your children's school	1	2	3	4	5	n.a.
e) Your preparation	1	2	3	4	5	n.a.
f) Predeparture orientation	1	2	3	4	5	n.a.
g) Community in which you live	1	2	3	4	5	n.a.
h) Housing situation	1	2	3	4	5	n.a.
i) Community organizations/clubs	1	2	3	4	5	n.a.
j) Your spouse/children	1	2	3	4	5	n.a.
k) Relatives in the U.S.	1	2	3	4	5	n.a.
l) Friends	1	2	3	4	5	n.a.
m) Previous experience in the U.S.	1	2	3	4	5	n.a.
n) Amount of stipend	1	2	3	4	5	n.a.
o) Length of grant	1	2	3	4	5	n.a.
p) Language and/or accent	1	2	3	4	5	n.a.
q) Availability of news coverage about your country	1	2	3	4	5	n.a.
r) Accuracy of news coverage about your country	1	2	3	4	5	n.a.
s) Religious or racial assumptions	1	2	3	4	5	n.a.
t) CIES program administration in the U.S.	1	2	3	4	5	n.a.
u) The <i>Guide for Visiting Fulbright Scholars</i> and other materials provided by CIES	1	2	3	4	5	n.a.
v) Other _____	1	2	3	4	5	n.a.

The Future

1. To what extent do you think the following will result from your Fulbright experience?


	Certainly will <u>not result</u>	Probably will <u>not result</u>	<u>Uncertain</u>	Probably will <u>result</u>	Certainly will <u>result</u>
a) Publish as a result of grant	1	2	3	4	5
b) Return to U.S. for professional activities	1	2	3	4	5
c) Host an American colleague	1	2	3	4	5
d) Continue research collaboration	1	2	3	4	5
e) Develop new courses/curriculum	1	2	3	4	5
f) Develop a student exchange program	1	2	3	4	5
g) Job advancement/promotion (ALREADY FULL PROF.)	1	2	3	4	5

D. Your Story

Please tell us in your own words about your Fulbright experience. Some Fulbrighters have written about what they learned, what made a difference, or what the experience has meant to them. Others have elaborated on some part of the questionnaire. You may write about a specific incident or the overall experience.

Please attach one or more pages.

PLEASE SEE ATTACHED SUMMARY REPORT.
THANK YOU


PORTO, JULY 6, 2000

We sincerely appreciate the time and effort you have taken to help us with this very important project. Please know that your responses will help us to ensure an even better program in the future. Again, many thanks.

1 N ___ 2 Y ___