OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 — Version 02

* 1. Type of Submission:	* 2. Type of Application:	* If Revision, select appropriate letter(s):
○ Preapplication	● New	
● Application	○ Continuation	* Other (Specify)
○ Changed/Corrected Application	○ Revision	

* 3. Date Received:	4. Applicant Identifier:
04/17/2008	

5a. Federal Entity Identifier:	* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:	7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: The University of Texas Health Science Center at Houston

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
74-1761309	800771594

d. Address:

* Street1:	P.O. Box 20036
Street2:	
* City:	Houston
County:	Harris
* State:	TX: Texas
Province:	
* Country:	USA: UNITED STATES
* Zip / Postal Code:	77225

e. Organizational Unit:

Department Name:	Division Name:
Office of Sponsored Projects	

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:		* First Name:	Catherine
Middle Name:			
* Last Name:	Moore		
Suffix:			

Title: Grants Director

Organizational Affiliation:

* Telephone Number:	713-500-3999	Fax Number:	713-500-0355

* Email: osp@uth.tmc.edu

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

9. Type of Applicant 1: Select Applicant Type:

H: Public/State Controlled Institution of Higher Education

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

*** Other (specify):**

*** 10. Name of Federal Agency:**

U.S. Department of Education

11. Catalog of Federal Domestic Assistance Number:

84.116

CFDA Title:

Fund for the Improvement of Postsecondary Education

*** 12. Funding Opportunity Number:**

ED-GRANTS-020108-022

*** Title:**

Special Focus Competition: U.S.-Brazil Higher Education Consortia Program CFDA 84.116M

13. Competition Identification Number:

84-116M2008-1

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

UTHSC-H - Houston, Harris, TX, USA Duke - Durham, Randolph, NC, USA

*** 15. Descriptive Title of Applicant's Project:**

USA-Brazil Consortium For Education In Biomedical Informatics

Attach supporting documents as specified in agency instructions.

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 — Version 02

16. Congressional Districts Of:

* a. Applicant: TX-025 * b. Program/Project: NC-04

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

* a. Start Date: 09/01/2008 * b. End Date: 08/31/2012

18. Estimated Funding ($):

* a. Federal	199,504.00
* b. Applicant	0.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	199,504.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

○ a. This application was made available to the State under the Executive Order 12372 Process for review on .

○ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

● c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

○ Yes ● No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☑ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name: Catherine

Middle Name:

* Last Name: Moore

Suffix:

* Title: Grants Director

* Telephone Number: 713-500-3999 Fax Number: 713-500-0355

* Email: osp@uth.tmc.edu

* Signature of Authorized Representative: Catherine Moore * Date Signed: 04/17/2008

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Standard Form 424 (Revised 10/2005)
Prescribed by OMB Circular A-102

Application for Federal Assistance SF-424

Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

Attachments

AdditionalCongressionalDistricts

File Name **Mime Type**

AdditionalProjectTitle

File Name **Mime Type**

ASSURANCES - NON-CONSTRUCTION PROGRAMS

OMB Approval No. 4040-0007
Expiration Date 04/30/2008

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis- Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327- 333), regarding labor standards for federally-assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93- 205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL Catherine Moore	* TITLE Grants Director
* APPLICANT ORGANIZATION The University of Texas Health Science Center at Houston	* DATE SUBMITTED 04-17-2008

Standard Form 424B (Rev. 7-97) Back

Tracking Number: GRANT00453467

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

Approved by OMB

0348-0046

1. * Type of Federal Action:	2. * Status of Federal Action:	3. * Report Type:
__a. contract ●b. grant __c. cooperative agreement __d. loan __e. loan guarantee __f. loan insurance	__a. bid/offer/application ●b. initial award __c. post-award	●a. initial filing __b. material change For Material Change Only: year quarter date of last report

4. Name and Address of Reporting Entity:	5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:
●Prime __SubAwardee Tier if known: * Name: The University of Texas Health Science Center * Address: P.O. Box 20036 Houston TX: Texas 77225 Congressional District, if known:	
6. * Federal Department/Agency: Institution Does Not Participate	7. * Federal Program Name/Description: Fund for the Improvement of Postsecondary Education CFDA Number, if applicable: 84.116
8. Federal Action Number, if known:	9. Award Amount, if known:
10. a. Name and Address of Lobbying Registrant (if individual, complete name): * Name: Institute Does Not Participate Institute Does Not Participate * Address:	b. Individual Performing Services (including address if different from No. 10a): * Name: Institute Does Not Participate Institute Does Not Participate
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	* Signature: Catherine Moore * Name: Institute Does Not Participate Institute Does Not Participate Title: Telephone No.: Date: 04-17-2008

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Public Burden Disclosure Statement

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

NOTICE TO ALL APPLICANTS

The purpose of this enclosure is to inform you about a new provision in the Department of Education's General Education Provisions Act (GEPA) that applies to applicants for new grant awards under Department programs. This provision is Section 427 of GEPA, enacted as part of the Improving America's Schools Act of 1994 (Public Law (P.L.) 103-382).

To Whom Does This Provision Apply?

Section 427 of GEPA affects applicants for new grant awards under this program. **ALL APPLICANTS FOR NEW AWARDS MUST INCLUDE INFORMATION IN THEIR APPLICATIONS TO ADDRESS THIS NEW PROVISION IN ORDER TO RECEIVE FUNDING UNDER THIS PROGRAM.**

(If this program is a State-formula grant program, a State needs to provide this description only for projects or activities that it carries out with funds reserved for State-level uses. In addition, local school districts or other eligible applicants that apply to the State for funding need to provide this description in their applications to the State for funding. The State would be responsible for ensuring that the school district or other local entity has submitted a sufficient section 427 statement as described below.)

What Does This Provision Require

Section 427 requires each applicant for funds (other than an individual person) to include in its application a description of the steps the applicant proposes to take to ensure equitable access to, and participation in, its Federally-assisted program for students, teachers, and other program beneficiaries with special needs. This provision allows applicants discretion in developing the required description. The statute highlights six types of barriers that can impede equitable access or participation: gender, race, national origin, color, disability, or age. Based on local circumstances, you should determine whether these or other barriers may prevent your students, teachers, etc. from such access or participation in, the Federally-funded project or activity. The description in your application of steps to be taken to overcome these barriers need not be lengthy; you may provide a clear and succinct description of how you plan to address those barriers that are applicable to your circumstances. In addition, the information may be provided in a single narrative, or, if appropriate, may be discussed in connection with related topics in the application.

Section 427 is not intended to duplicate the requirements of civil rights statutes, but rather to ensure that, in designing their projects, applicants for Federal funds address equity concerns that may affect the ability of certain potential beneficiaries to fully participate in the project and to achieve to high standards. Consistent with program requirements and its approved application, an applicant may use the Federal funds awarded to it to eliminate barriers it identifies.

What are Examples of How an Applicant Might Satisfy the Requirement of This Provision?

The following examples may help illustrate how an applicant may comply with Section 427.

(1) An applicant that proposes to carry out an adult literacy project serving, among others, adults with limited English proficiency, might describe in its application how it intends to distribute a brochure about the proposed project to such potential participants in their native language.

(2) An applicant that proposes to develop instructional materials for classroom use might describe how it will make the materials available on audio tape or in braille for students who are blind.

(3) An applicant that proposes to carry out a model science program for secondary students and is concerned that girls may be less likely than boys to enroll in the course, might indicate how it intends to conduct "outreach" efforts to girls, to encourage their enrollment.

We recognize that many applicants may already be implementing effective steps to ensure equity of access and participation in their grant programs, and we appreciate your cooperation in responding to the requirements of this provision.

Estimated Burden Statement for GEPA Requirements

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1890-0007. The time required to complete this information collection is estimated to average 1.5 hours per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. **If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to:** Director, Grants Policy and Oversight Staff, U.S. Department of Education, 400 Maryland Avenue, SW (Room 3652, GSA Regional Office Building No. 3), Washington, DC 20202-4248.

Attachment Information

File Name	Mime Type
2901-Bios_FIPSE.pdf	application/pdf

BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Iyengar, Madurai Sriram (formerly M.G. Sriram)	Assistant Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
The Indian Institute of Technology, Madras, India	B. Tech	1974	Electrical Engineering
The Indian Institute of Science , Bangalore, India	MS	1977	Electrical Comm. Engg
The Ohio State University, Columbus, Ohio	MS	1980	Statistics
The Ohio State University, Columbus, Ohio	Ph.D.	1995	Computer Science (Distributed Computing, Artificial Intelligence, Statistics)

A. Positions and Honors.

Positions and Employment

1980-1987 Systems Analyst, Division of Computing Services, College of Medicine, The Ohio State University, Columbus, Ohio, United States of America
1987-1995 Researcher and Systems/Network Manager, Division of medical Informatics, The Ohio State University, Columbus, Ohio, United States of America
1995-1998 Senior Architect, Senior Consultant, NetForce, Inc., San Francisco, California
1998-1999 Vice President Product Development, Aadroitt Systems, N. Hollywood, California.
1999-2001 Vice President Software Engineering, HelloBrain Corporation, Santa Clara, California
2001-2002 Consultant, HelloBrain Corporation Professional Service
2002-2002 Visiting Scientist, Computer Science Laboratory, SRI International, Menlo Park,. California
2002-2004 Informatics Research Scientist, National Space Biomedical Research Institute, NASA Johnson Space Center and Baylor College of Medicine, Houston, Texas
2004-current Asst Professor. School of Health information Sciences, University of Texas Health Science Center at Houston
2004–current Informatics Research Scientist, Medical Informatics and Health Care Systems, NASA Johnson Space Center, Houston, Texas

Awards

- Microsoft Research: Cellphone as Platform for Healthcare, February 2008
  Project Title: Interactive Structured Multimodal clinical guidelines on cell phones
- University of Texas Health Science Center at Houston: Young Investigator Award, 2007

Other Experience and Professional Memberships

2006- 2007. Admitted to membership in Association of Clinical Scientists, July 2007

B. Selected peer-reviewed publications (in chronological order).

1. DW Mercer, SD Adams, JW Suliburk, EA Gonzalez, RA Kozar, **M Sriram Iyengar**, MF McGuire, FA Moore. Can Cytokines Predict Multiple Organ Failure in Critically Ill Trauma Patients. Presented at 7th World Congress on Trauma, Shock, Inflammation and Sepsis, Munich, Germany March 13-17, 2007.
2. J. Florez-Arango, **M Sriram Iyengar**, Delivering Structured, Multi-modal Clinical Guidelines via Cell Phones. MedInfo2007, Brisbane, Australia, August 2007
3. **M Sriram Iyengar**, J. Florez-Arango, Demonstration of GuideView, a Multi-platform System for Interactive, Multimodal Presentation of Clinical Advice. MedInfo2007, Brisbane, Australia, August 2007
4. T. Carruth, **M Sriram Iyengar**, Informatics Support for Decompression Sickness on Space Missions, MedInfo2007, Brisbane, Australia, August 2007
5. J Herskovic, EV Bernstam, **M Sriram Iyengar**, Using Hit Curves to Compare Search Algorithm Performance. Journal of Biomedical Informatics, 40:2, Pages 93-99, 2007.
6. **M Sriram Iyengar**, C. Talcott, R Mozzachiodi, D Baxter. Executable Symbolic Modeling of Neural Processes. Computational Methods in Systems Biology, CSMB06, Trento, Italy, October 2006.
7. D Ruths, L. Nakhleh, **M Sriram Iyengar**, *et al*. Hypothesis Generation in Signaling Networks. Journal of Computational Biology, 13:9, Pages 154 –1557, 2006.
8. **M. Sriram Iyengar**, D Gillis et al. GuideView: Structured, Interactive, Multimodal Delivery of Clinical Guidelines. Presentation at ATA 2006 Conference, San Diego, CA.
9. **M. Sriram Iyengar**, M. Singhal. Effect of Network Delays on Load Sharing in Distributed Computing Systems, Jour. Parallel and Distributed Computing. 66:6 , June 2006, Pages 839-853.
10. EV Bernstam, JR Herskovic, Y Aphinyanaphongs, CF Aliferis, **MG Sriram**, WR Hersh, Using citation data to improve retrieval from MEDLINE. Journal of the American Medical Informatics Association, 13:1, pp 96-105, January 2006
11. **Sriram, M.G.**, Talcott, C., Lincoln, P., et, a.l. (2003), Rovereto, Italy. Representing and Simulating Protein Functional Domains in Signal Transduction Using Maude. International Workshop on Computational Methods in Systems Biology
12. **Sriram, M.G.** (2003) Modeling protein functional domains in Signal Transduction using Maude. Briefings in Bioinformatics, 4(3).
13. **Sriram, M.G.**, Rodriguez, J., et, a.l. (2001) MEDAL. Medical Algorithms Project. Jornadas Argentinas de Informática e Investigación Operativa. Simposio de Informática en Salud SIS 2001 Buenos Aires, Argentina.
14. **Sriram, M.G.**, Kantor, G., Svirbely, J.R., et, a.l. (2001) MEDAL: The Medical Algorithm Project. Medinfo 2001 London
15. **Sriram, M.G.**, Johnson, K.A., Svirbely, J.R., et, a.l. (2001) 'Automated Medical Algorithms: Issues for Medical Errors. 2001 AMIA Symposium Washington, D C.
16. **Sriram, M.G.**, Svirbely, J. (1999) Medal, A Compendium Of Medical Algorithms For Access Over The Internet. AMIA 1999, Washington, D C
17. **Sriram, M.G.**, S.R.Simon., et, a.l. (1996) Applications of Intelligent Multimedia technology in Human Motion Analysis. In Harris GF;Smith PA (Ed.), Human Motion Analysis: Current Applications and Future Directions. IEEE Press
18. **Sriram, M.G.**, Van, der, Meulen, EC., Dudewicz, E.J., Teoh, K.W. (1995) Entropy Based Evaluation of Random Numbers. American Journal of Mathematical and Management Sciences, 15: 115-153.
19. **Sriram, M.G.**, Singhal, M. (1995) Predicting and Estimating Job Execution Times in Computing Systems using Survival Analysis. OSU-CISRC-7/95-TR32.
20. **Sriram, M.G.**, Singhal, M. (1995) Measures of Load Sharing Potential in Distributed Computer Systems. IEEE Trans Software Engineering,.
21. **Sriram, M.G.**, Dudewicz, E.J. (1994) A Mobile Pen-computer based Clinical Laboratory Test Ordering and Retrieval System. No 94-105, Division of Medical Informatics, College of Medicine, The Ohio State University.
22. **Sriram, M.G.**, Mokry, H., Rao, B., George, J.M. (1987) Effect of Two-Week Infusion of Deamino D-Arginine Vasopressin in Rats. Hormone Research, 25: 60-64.

23. **Sriram, M.G.** (1984) STRATIF: A procedure for producing stratified variables. Proceedings of SUGI84, SAS Users Group International _1984 Conference, Hollywood, Florida.
24. **Sriram, M.G.,** Minton, J.P., Abou-Issa, H.A., Foecking, M.K. (1983) Caffeine and unsaturated fat diet significantly promotes DMBA-induced breast cancer in rats. Cancer, 51.
25. **Sriram, M.G.,** Dudewicz, E.J. (1980) Two-stage procedures for Selection in comparison with a standard, Formulation I: Selection of all Treatments better than the standard (Heteroscedastic case), Known and Unknown standard cases. No 207PREL, Department of Statistics, The Ohio State University.
26. **Sriram, M.G.,** Bringi, V.N., Seliga, T.A. (1980) Statistical Characteristics of Differential Reflectivity Radar Signals. Nineteenth Conference on Radar Meterorology, Miami Beach, Florida.
27. **Sriram, M.G.,** Bringi, V.N., Seliga, T.A. (1979) Correlation Properties of Differential Reflectivity. Quarterly Report to the Air Force Geophysics Laboratory.

C. Research Support

Ongoing Research Support

8/01/07 – 9/30/08
NNJ06HG25A 60% calendar
NASA/USRA $106,482
PI: Integrated Medical Model for Exploration
The goal of this project is to develop a predictive model for assessing medical risks during long duration space exploration missions. The model will also enable determination on the types and amounts of medical devices, therapies, skills and training that will be needed during such missions

9/25/07 – 9/24/08
W81XWH-04-00035 10% calendar
TATRC/US Army $195,000
PI: Guideview: A System for Structured, Multimodal Delivery of Clinical Guidelines
The aim here is to develop a system for delivery of 'just-in-time' medical procedure assistance using multimodal techniques under Windows Mobile PDAs. In addition, the system will be integrated with BMIST-J, the EMR system for PDAs developed by TATRC

11/1/06 – 10/31/11
1UL1RR024148-01 20% calendar
NIH
Center for Translational Sciences, UTHSCH
Development of software and systems to support translational biomedical research, comprising a platform for Translational BioInformatics

Previous
Co-Investigator on the following funded research grants:

- "Cognitive Tools for Problem Solving in Transfusion Medicine," National Heart, Lung, and Blood Institute(R01 HL38776), July 1, 1992 -June 30, 1996, (b)(4) (4 years).

- "Evaluation of Transfusion Medicine Learning Environment" National Heart, Lung, and Blood Institute (R01 HL51611), December 1, 1993 - November 30, 1996, (b)(4) 3 years).

- "Investigation of Problem-Solving in Man Machine Systems for Decision Support and Education in Immunohematology", National Heart, Blood, and Lung Institute, National Institutes of Health, (R01 HL38776), July 1, 1987-1992, (b)(4) (5 years).

- "Computer-Based Pathology Consultant/Liver Submodule," National Library of Medicine, (R01 LM-04298), 9/1/89 - 9/30/92, (b)(4).

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Smith, Jack W.	Professor and Dean
COMMONS USER NAME jwsmith	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Virginia Polytechnic Institute and State	B.S.	1973	Physics
West Virginia University Medical School	M.D.	1977	Medicine
Ohio State University	M.S.	1980	Computer and Information Sciences
Ohio State University	Ph.D.	1986	Computer and Information Sciences

A. Positions and Honors. Include present membership on any Federal Government public advisory committee.

Positions and Employment

1976-1977 Trainee, University of Alabama at Birmingham, National Library of Medicine Biomedical Computing, Biophysical Sciences
1977-1980 Research Associate, Ohio State University, National Library of Medicine, Training Grant in Biomedical Computing
1977-1998 Adjunct Instructor, Ohio State University, Allied Medical Professions
1978-1981 Resident, Ohio State University, Medicine Pathology, Clinical Pathology
1980-1981 Resident, Ohio State University, Medicine, Pathology, Clinical Pathology
1980-1985 Post-doctoral Fellow, Ohio State University, National Library of Medicine, Training Grant in Biomedical Computing
1981-1987 Instructor and Associate Director, Clinical Chemistry; Chief, Ohio State University, Medical, Pathology, Laboratory Data Processing
1988-1990 Assistant Professor, Ohio State University, College of Engineering, Computer and Information Science
1990-1998 Associate Professor, Director, Ohio State University, Medical, Pathology, Medical Informatics
1990-1998 Associate Professor, Ohio State University, College of Engineering, Computer and Information Science
1993-1998 Associate Professor, Center Faculty, Ohio State University, Center for Cognitive Science
1993-1998 Associate Attending Staff, Ohio State University, Arthur G. James Cancer Hospital and Research Institute
1995-1996 Acting Associate Director, Ohio State University, Center for Cognitive Sciences
1997-1998 Director, Ohio State University, Clinical Outcomes Research
1998-2001 Chair, Health Informatics, University of Texas Health Science Center at Houston, School of Health Information Sciences
1998-present Professor, Health Informatics, University of Texas Health Science Center at Houston, School of Health Information Sciences
2001-2002 Associate Dean for Research, University of Texas Health Science Center at Houston, School of Health Information Sciences
2002-2002 Associate Dean, University of Texas Health Science Center at Houston, School of Health Information Sciences
2003-2005 Interim Dean, University of Texas Health Science Center at Houston, School of Health Information Sciences
2005-2006 Team Lead, Exploration Medicine Capability, Medical Informatics and Healthcare Systems - NASA Johnson Space Center, Houston, Texas

2006-Present Professor and Dean, University of Texas Health Science Center at Houston, School of Health Information Sciences

2006-Present Director, Bioinformatics Component of the Center for Clinical and Translational Sciences The University of Texas Health Science Center at Houston

Other Experience and Professional Memberships

American College of Medical Informatics
Association for Computing Machinery
American Medical Informatics Association

Honors

1982 Certified, American Board of Pathology
1985 Best Paper Award, 18th Annual Hawaii International Conference on System Science
1987 Young Investigator Award for Research in Medical Knowledge Systems, American Association for Medical Systems and Informatics
1988 Collaborative Research in Allied Health, Ohio State University
1989 Elected Fellow, American College of Medical Informatics
1989-1985 Career Development Award, National Library of Medicine, NIH

B. Selected peer-reviewed publications (in chronological order).

1. Bayazitoglu A, Smith JW, Johnson TR. Diagnostic System That Learns From Experience. In E.Bolger (Ed.), (pp. 685-689). Proceedings of the Sixteenth Annual Symposium on Computer Applications in Medical Care. New York: McGraw-Hill, Inc. (1992)
2. Chandrasekaran B, Johnson TR, Smith JW. (1992) Task-structure analysis for knowledge modeling. Communications of the ACM, 35(9): 124-139.
3. Bayazitoglu A, Johnson TR, Smith JW. (1993) Limitations of the unique-attribute representation for a learning system. In Proceedings of the Ninth IEEE Conference on Artificial Intelligence for Applications.
4. Chandrasekaran B, Johnson TR, Smith JW. (1993) Task-Structure Analysis for Knowledge Modeling. Knowledge Oriented Software Design (A-27). (pp. 3-21).
5. Johnson TR, Smith JW, Chandrasekaran B. (1993) Task-specific architectures for flexible systems. In P.S.Rosenbloom JEL&AN (Eds.), (pp. 1004-1026). Soar Papers: Research on Integrated Intelligence. Cambridge, Mass: MIT Press.
6. Smith JW, Johnson TR. A stratified approach to specifying, designing, and building knowledge systems. IEEE Expert. 1993;8(3): 15-25.
7. Johnson TR, Smith JW. (1994) Abduction in Soar. In J.R.Josephson & S.G.Josephson (Eds.), (pp. 105-116). Abductive Inference: Computation, Philosophy, Technology. Cambridge: Cambridge University Press.
8. Simon SR, Smith JW, Smith PJ, Nippa J, Johnson KA, Stern L, Sriram M. (1995) Applications of Intelligent Multi-Media Technology in Human Motion Analysis. MD Human Motion Analysis: Current Applications and Future Directions. In Harris G;Smith P (Ed.),.
9. Smith JW, Bayazitoglu A, Johnson TR, Johnson KA, Amra NK. (1995) One Framework, Two Systems: Flexible Abductive Methods in the Problem-Space Paradigm Applied to Antibody Identification and Biopsy Interpretation. Artificial Intelligence in Medicine, 7: 201-225.
10. Johnson KA, Simon SR, Smith PJ, Smith JW. (1997) A Multimedia System for Generating Gait Analysis Reports. Proceedings of RESNA 97.
11. Svirbely J, Smith JW, Speicher C. (1997) Computers and Laboratory Information Systems. Management in Labortory Medicine. In Snyder JaWD (Ed.), (pp. 299-314).
12. Johnson KA, Simon SR, Smith PJ, Smith JW. (1999) Intelligent Support of Gait Analysis. Proceedings of AMIA 99.
13. Smith JW, Turley JP, Johnson KA, Johnson TR, Zhang J, Johnson CM. (1999) Web-based education - technology & design. The University of Texas System Annual Telecommunications and Information Technology Conference.

14. Johnson KA, Svirbely J, Sriram M, Smith JW, Kantor G, Rodriguez J. (2001) Automated Medical Algorithms: Issues for Medical Errors. Proceedings of AMIA 2001.
15. Kantor G, Svirbely J, Johnson KA, Sriram M, Smith JW. (2001) The Medical Algorithm Project. Proceedings of MEDINFO 2001, London England.
16. Zhang J, Johnson KA, Smith JW. (2001) Human-centered intelligent flight surgeon console. UTH Research Day, November 2001.
17. Zhang J, Johnson KA, Smith JW, Malin J. (2001) Human centered intelligent flight surgeon console. NASA Project Meeting, NASA Ames.
18. Zhang J, Patel V, Smith JW, Turley JP, Johnson TR. (2001) Human errors in Medicine: Theoretical issues and Practical Implications. Proceedings of the Third International Conference on Cognitive Science. Press of USTC. Beijing, 220.
19. Bernstam EV, Smith JW. (2002) Clinical practice guidelines as educational tools: Knowledge dissemination in clinical medicine. Presented at the Advances in Learning and Teaching Day 2002 Houston, TX February 14, 2002.
20. Zhang J, Johnson KA, Malin J, Smith JW. (2002) Human-centered information visualization. Proceedings of International Workshop on Dynamic Visualization and Learning.
21. Zhang J, Johnson KA, Malin J, Smith JW. (2002) Human-centered information visualization. Proceedings of International Workshop on Dynamic Visualization and Learning.
22. Zhang J, Johnson KA, Smith JW, Malin J. (2002) Human centered intelligent flight surgeon console. NASA Project Meeting, Pensacola Florida.
23. Zhang J, Patel V, Johnson KA, Malin J, Smith JW. Human-centered distributed information design. IEEE Intelligent Systems. 2002
24. Zhang J, Patel VL, Johnson KA, Malin J, Smith JW. Designing human-centered distributed information systems. IEEE Intelligent Systems. 2002;17(5): 42-47.
25. Aoki N, Okada T, Nishida K, Ohta S, Oisi M, Toyomasu K, Hira K, Dunn K, Schull WJ, Smith JW, Fukui T. Development and evaluation of an IMT 2000 cellularphone care support system for Type-1 diabetic patients in Japan. American Telemedicine Association April 27 - 30, 2003 Orlando, FL.

C. Research Support.

Ongoing Research Support

Hongbin Wang (PI) 01/01/03 - 12/31/04
Keck Center for Computational & Structural Biology
A Dynamic Lens Model of Diagnostic Judgment
Role: Mentor

1R21CA89475-01A JACK W. SMITH (PI) 09/01/01 - 08/31/04
NCI
Colorectal Cancer Screening and the NetLET Intervention
Role: PI

T6858W Jack W. Smith (PI) 01/01/01 - 06/30/04
NASA Johnson Space Ct
IPA for Dr. Jack Smith at NASA-JSC
Role: PI

NCC 2-1234 Jiajie Zhang (PI) 03/01/01 - 05/28/04
NASA-AMES
Human-Centered Intelligent Flight Surgeon Console
Role: Co-Investigator

Completed Research Support

2T15-LM07093 Jack W. Smith (PI) 02/15/01 - 02/14/02
Keck via NLM
Medical Informatics Research Training Grant
Role: Mentor

Kathy A. Johnson (PI) 01/03/01 - 01/31/01
Merck & Co., Inc
Evaluation of Prototype Merck Medicus
Role: Co-Investigator

Jack W. Smith (Co I) 01/01/01 – 12/01/03
National Aeronautics & Space Administration
Toward an Autonomous Robotics for Space Medicine
Role: Co-Investigator

Jack W. Smith (Co I) 05/31/99 – 04/30/01
Telecommunications Infrastructure Fund Board
BabyCam.
Role: Co-Investigator

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. DO NOT EXCEED FOUR PAGES.

NAME	POSITION TITLE
Johnson, Todd R.	Associate Dean for Academic Affairs and Associate Professor
eRA COMMONS USER NAME TJOHNSON	

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.*)

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
The Ohio State University	B.S.	1984	Computer and Information Science
The Ohio State University	M.S.	1986	Computer and Information Science
The Ohio State University	Ph.D.	1991	Computer and Information Science Artificial Intelligence

A. Positions and Honors.

Positions and Employment

1991-1997 Assistant Professor, The Ohio State University Department of Pathology, Division of Medical Informatics, Laboratory for Knowledge-Based Medical Systems.
1995-1998 Center Faculty, Center for Cognitive Science, The Ohio State University
1997-1998 Associate Professor, The Ohio State University Department of Pathology, Division of Medical Informatics, Laboratory for Knowledge-Based Medical Systems
1997-1998 Cognitive Science Curriculum Coordinator, Center for Cognitive Science, The Ohio State University
1998-present Associate Professor, Dept. of Health Informatics, School of Allied Health Sciences, University of Texas at Houston.

Other Experience and Professional Memberships

1991-present Cognitive Science Society
1998-present American Medical Informatics Association

B. Selected peer-reviewed publications (in chronological order).

(Publications selected from 34 peer-reviewed publications)

1. Chandrasekaran, B., Johnson, T. R., & Smith, J. W. (1992). Task-structure analysis for knowledge modeling. *Communications of the ACM, 35*(9), 124-139.
2. Smith, J. W. & Johnson, T. R. (1993). A stratified approach to specifying, designing, and building knowledge systems. *IEEE Expert, 8*(3), 15-25.
3. Johnson, T. R., Smith, J. W. & Chandrasekaran, B. (1993). Task-specific architectures for flexible systems. In P. S. Rosenbloom, J. E. Laird, & A. Newell (Ed.), *The Soar Papers: Research on Integrated Intelligence* (pp. 1004-1026). Cambridge, Mass: MIT Press.
4. Johnson, T. R., Zhang, J., & Wang, H. (1997). A hybrid learning model of abductive reasoning. In R. Sun & F. Alexandre (Eds.), *Connectionist Symbolic Integration* (pp. 91-112). Mahwah, NJ: Lawrence Erlbaum Associates.
5. Wang, H., Johnson, T. R., & Zhang, J. (1998). UEcho: A model of uncertainty management in human abductive reasoning. In M. A. Gernsbacher & S. J. Derry (Eds.), *Proceedings of the Twentieth Annual Meeting of the Cognitive Science Society* (pp. 1113-1118). Hillsdale, NJ: Lawrence Erlbaum. . [This paper won the 1998 Marr Prize for best Student paper]
6. Zhang, J., Johnson, T. R., & Wang, H. (1998). Order effects and frequency learning in tactical decision making. *Thinking and Reasoning, 4*(2), 123-125.

7. Wang, H., Zhang, J., & Johnson, T. R. (2000). Order Effects in Human Belief Revision. In *Proceedings of the Twenty Second Annual Conference of the Cognitive Science Society*. Hillsdale, NJ: Lawrence Erlbaum.
8. Johnson, C., Johnson, T. R., & Zhang, J. (2000). Increasing Productivity and Reducing Errors through Usability Analysis: A Case Study and Recommendations, *Proceedings of the American Medical Informatics Association Annual Symposium*. Hillsdale, NJ: Lawrence Erlbaum Associates.
9. Chuah, J., Zhang, J., & Johnson, T. R. (2000). The Representational Effect in Complex Systems: A Distributed Representation Approach, *Proceedings of the Twenty Second Annual Meeting of the Cognitive Science Society*.
10. Turley, J.P., Johnson, C., Johnson, T., & Zhang, J. (2001). A Clean Slate: Initiating a Graduate Program in Health Informatics. *MD Computing*, 18 (1), 47-48
11. Johnson, T. R., Turley, J. P., & Patel, V. L. (2001). Cognitive Differences in Chart Reading: A Comparison of Nurses and Physicians. In *Proceedings AMIA Fall Symposium*.
12. Johnson, T. R., & Krems, J. F. (2001). Use of current explanations in multi-causal abductive reasoning. *Cognitive Science, 25*, 903-939.
13. Johnson, T. R., Wang, H., Zhang, J., & Wang, Y. (2002). A model of spatio-temporal coding of memory for multidimensional stimuli. In W. Gray & C. Schunn (Eds.), *Proceedings of the Twenty-Fourth Annual Conference of the Cognitive Science Society* (pp. 506-511). Mahweh, NJ: Lawrence Erlbaum Associates.
14. Brixey, J., Johnson, T. R., & Zhang, J. (2002). Evaluating a medical error taxonomy. *Proc AMIA Symp*, 71-75.
15. Zhang, J., Patel, V. L., & Johnson, T. R. (2002). Medical error: is the solution medical or cognitive? *J Am Med Inform Assoc, 9*(6 Suppl), S75-77.
16. Wang, H., Johnson, T. R., & Zhang, J. (2003). A multilevel approach to cognitive modeling (Commentary on Anderson & Lebiere - The Newell Test for a Theory of Cognition). *Behavioral and Brain Sciences, 26*(5), 626-627.
17. Keselman, A., Patel, V. L., Johnson, T., & Zhang, J. (2003). Institutional decision making to select patient care devices: identifying venues to promote patient safety. *Journal of Biomedical Informatics, 36*(1-2), 31-44.
18. Chung, P. H., Zhang, J., Johnson, T. R., & Patel, V. L. (2003). An extended hierarchical task analysis for error prediction in medical devices. *Proc AMIA Symp*, 165-169.
19. Zhang, J., Johnson, T. R., Patel, V. L., Paige, D. L., & Kubose, T. (2003). Using usability heuristics to evaluate patient safety of medical devices. *Journal of Biomedical Informatics, 36*(1-2), 22-30.
20. Wang, H., Johnson, T. R., & Zhang, J. (2003). A multilevel approach to cognitive modeling (Commentary on Anderson & Lebiere - The Newell Test for a Theory of Cognition). *Behavioral and Brain Sciences, 26*(5), 626-627.
21. Johnson, T. R., Zhang, J., Tang, Z., Johnson, C. M., & Turley, J. P. (2004). Assessing Informatics Students' Satisfaction with a Web-based Courseware System. *International Journal of Medical Informatics* (73), 181-187.
22. Zhang, J., Patel, V. L., Johnson, T. R., & Shortliffe, E. H. (2004). A cognitive taxonomy of medical errors. *Journal of Biomedical Informatics, 37*(3), 193-204.
23. Wang, H., Fan, J., & Johnson, T. R. (2004). A symbolic model of human attentional networks. *Cognitive Systems Research, 5*, 119-134.
24. Graham, M. J., Kubose, T. K., Jordan, D., Zhang, J., Johnson, T. R., & Patel, V. L. (2004). Heuristic evaluation of infusion pumps: implications for patient safety in intensive care units. *International Journal of Medical Informatics, 73*, 771-779.
25. Johnson, C. M., Johnson, T. R., & Zhang, J. (2005). A user-centered framework for redesigning health care interfaces. *Journal of Biomedical Informatics, 38*, 75-87.
26. Laxmisan, A., Malhotra, S., Keselman, A., Johnson, T. R., & Patel, V. L. (2005). Decisions about critical events in device-related scenarios as a function of expertise. *Journal of Biomedical Informatics, 38*, 200-212.
27. Zhang, J., Patel, V. L., Johnson, T. R., & Turley, J. P. (2005). Evaluating and predicting patient safety in medical device use. In K. Henriksen, J. B. Battles, E. Marks & D. I. Lewin

(Eds.), *Advances in Patient Safety: From Research to Implementation (pp. 323-336).* Rockville, MD: Agency for Healthcare Research and Quality.
28. Johnson, T. R., Zhang, J., Patel, V. L., Keselman, A., Tang, X., Brixey, J., Paige, D., Turley, J. P. (2005). The role of patient safety in the device purchasing process. In K. Henriksen, J. B. Battles, E. Marks & D. I. Lewin (Eds.), *Advances in Patient Safety: From Research to Implementation (pp. 341-352).* Rockville, MD: Agency for Healthcare Research and Quality.
29. Zhang, J., Patel, V. L., Johnson, T. R., & Turley, J. P. (2005). Health informatics and medical error. In *Business Briefing: US Healthcare Strategies 2005* (pp. 34-35): Touch Briefings.
30. Wang, H., Johnson, T. R., Sun, Y., & Zhang, J. (2005). Object-location memory: The interplay of multiple representations. *Memory & Cognition, 33*(7), 1147-1159.
31. Wang, H., Sun, Y., Johnson, T. R., & Yuan, Y. (2005). Prioritized Spatial Updating in the Intrinsic Frame of Reference. *Spatial Cognition and Computation*, 5(1), 89-113.
32. Tang, Z., Zhang, J., Johnson, T. R., & Tindall, D. (2006). Applying heuristic evaluation to improving the usability of a telemedicine system. *Journal of Telemedicine and Telecare, 12*(1), 24-34.
33. Turley, J.P., Brixey, J.J., Johnson, T.R., Mokkarala, P., & Zhang, J. (2006). Comprehensive Medical Error Ontology for the Codification of Published Literature. *Cognitive Studies: Bulletin of the Japanese Cognitive Science Society*, 13 (1), 6-16.
34. Turley, J.P., Johnson, T.R., Smith, D.P., Zhang, J., & Brixey, J.J. (2006) Operating Manual-Based Usability Evaluation of Medical Devices: An Effective Patient Safety Screening Method. Joint Commission on Quality and Patient Safety, 32 (4), 214-220

C. Research Support

Ongoing Research Support

1-R01-HS015234-01 Eric Thomas (PI) 9/30/04-9/29/07
Agency for Healthcare Research and Quality
Measuring the value of remote ICU monitoring
Role: Co-Investigator

Completed Research Support

5P01 HS11544-02 Todd R. Johnson (PI) 09/26/01-08/31/06
AHRQ
Translating Safety Practices from Aviation for Healthcare
Role: PI

1-R01-LM007894-01A Jiajie Zhang (PI) 02/01/04-10/30/06
Columbia University
Cognition and Error Management in Critical Care
Role: Co-Investigator

N000140110074 Hongbin Wang (PI) 10/15/00 - 03/31/04
NAVY
Modeling Spatial Cognition 01
Role: Co-Investigator

5F38LM07188-02 Todd R. Johnson (PI) 04/01/01 - 03/31/03
NIH:NLM
Applying Usability Engineering To Improve a Computational Knowledge-Based System
Role: Mentor

NAG 9-1247 Hongbin Wang (PI) 07/19/00 - 01/31/03
NASA Johnson Space Ct

Development of Reinforcement Learning Techniques for Efficient Training of Semi-Autonomous Robotic Systems
Role: Co-Investigator

2000-36-UT-HOUS Jiajie Zhang (PI) 05/01/02 - 04/30/03
Natl Med Tech Testbed
Toward a Taxonomy of Medical Errors in Critical Care: A Cognitive Analysis of Infusion Pump Usability (no cost extension in process)
Role: Co-Investigator

DAMD17-01-20054 James H. Duke (PI) 09/26/01 - 10/31/03
Department of the Army (MS Dept of Surgery)
Disaster Relief and Emergency Medical Services (Dreams):Digital EMS Project
Role: Co-Investigator

011618-0077-1999 Todd R. Johnson (PI) 01/01/00 - 08/31/02
Texas Higher Education Coordinating Board
Redesign of a Genetics Tracking Program to Improve Ease of Use and Reduce Errors
Role: PI

RF808484 Todd R. Johnson (PI) 07/01/98 - 06/30/02
OSU Research Fdn
The Development of Understanding in Mathematics and Science: Cognitive mechanisms and methods of amplification.
Role: PI

Todd R. Johnson (PI) 10/01/00 - 08/31/01
George Washington Univ
Prometheus Usability Testing
Role: Other

N00014-99-1-024 Todd R. Johnson (PI) 12/01/98 - 01/31/99
ONR
A Hybrid Learning Architecture for Tactical Decision
Role: PI

N00014-99-1-0255 Jiajie Zhang (PI) 01/01/99 - 12/31/99
ONR
Toward a Cognitive Theory of Direct Interaction-Retargeting Tasks
Role: Co-Investigator

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Ricardo Pietrobon, MD, PhD, MBA	Associate Vice Chair and Assistant Professor, Department of Surgery and Director of Biomedical Informatics, Duke Translational Medicine Institute
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Federal University of Parana, Curitiba, PR, Brazil	MD	1988-1995	Medicine
University North Carolina at Chapel Hill	PhD	1999-2004	Epidemiology
Fuqua School of Business, Durham, NC	MBA	2004-2006	Business Administration

A. Positions and Honors.

2001-present Assistant Professor, Department of Surgery, Division of Orthopedic Surgery, Duke University Medical Center, Durham, NC

2002-present Assistant Professor, Department of Anesthesiology, Division of Ambulatory Anesthesiology, Duke University Medical Center, Durham, NC

2006-present Director of Biomedical Informatics, Duke Translational Medicine Institute

2007-present Associate Vice Chair for Systems Integration

2007- present Assistant Professor, DUKE/NUS Graduate Medical School, Singapore

B. Selected peer-reviewed publications (in chronological order).

(From 109 publications)

1. Pietrobon R. Coeytaux RR. Carey TS. Richardson WJ. DeVellis RF. Standard Scales for Measurement of Functional Outcome for Cervical Pain or Dysfunction: A Systematic Review. Spine, vol 27, issue: 5, pp 515-522, 2002
2. Pietrobon R, Taylor M, Guller U, Higgins LD, Jacobs DO, Carey T.Predicting gender differences as latent variables; summed scores, and individual item responses: a methods case study. Health Qual Life Outcomes. 2004 Oct 25;2(1):59 [Epub ahead of print]
3. Pietrobon R, Nielsen K, Steele SM, Menezes AP, Martins H, Jacobs DO. " Manuscript Architect: a Web application for scientific writing in virtual interdisciplinary groups." BMC Med Inform Decis Mak. 2005 Jun 16;5(1):15.
4. Nielsen KC, Guller U, Steele SM, Klein SM, Greengrass RA, Pietrobon R. A lesson learned. Anesthesiology. 2005 Aug;103(2):442.
5. Cook CE, Richardson JK, Pietrobon R. Dimensionality, internal consistency, and item analysis of the National Health and Nutrition Examination Surveys activities of daily living instrument among patients with report of low back pain. J Manipulative Physiol Ther. 2006 Mar-Apr;29(3):183-9.
6. Vail TP, Mina CA, Yergler JD, Pietrobon R. Metal-on-Metal Hip Resurfacing Compares Favorably with THA at 2 Years Followup Clin Orthop Relat Res. 2006 Sep 21; [Epub ahead of print]
7. Shah A, Jacobs DO, Martins H, Harker M, Menezes A, McCready M, Pietrobon R. DADOS-Survey: An open-source application for CHERRIES-compliant Web surveys. BMC Med Inform Decis Mak 2006 Sep 15,6:34.
8. Pietrobon R, Shah A, Kuo P, Harker M, McCready M, Butler C, Martins H, Moorman CT, Jacobs DO. Duke Surgery Research Central: an open-source Web application for the improvement of compliance with research regulation. BMC Med Inform Decis Mak. 2006 Jul 27;6(1):32

Research Support

Ongoing Research Support

Obesity and Nocturnal Oxygenation after Ambulatory Surgery

Respironics Sleep and Respiratory Research Foundation Klein (PI) 7/2007 – 6/2008
Role – co-PI
The objective of this prospective cohort study is to examining whether body mass index (normal, morbidly obese) increases the incidence of nocturnal hypoxemia in patients undergoing ambulatory laparoscopic surgery.
(b)(4)

Computer Simulation for the Optimization of Randomized Controlled Trial Performance
Synderman Foundation, Duke Clinical Research Institute (DCRI), Duke University Medical Center, Durham NC
Role – co-PI Shah (PI) 6/2007 – 6/2008
The objective of this study is to design a computer simulation that will model the performance of future randomized controlled trials based on historical data compiled from prior studies.
(b)(4

Naval Health Research Center (NHRC) Taylor (PI) 3/2007 – 3/2009
Psychophysiological Bases of Risk Taking and Cognition Under Stress
Role – co-investigator and collaborator
The purpose of this trial is Dr. Pietrobon's laboratory will then apply factor analytic techniques to determine the factor structure of the scale, and normative data will also be generated. Convergent and discriminant validity will be determined, and reliability analyses will be performed.
Role – co-investigator and collaborator
(b)(4)

Australian and New Zealand College of Anaesthetists Myles and Shaw (PI) 1/2007 – 1/2009
International Perioperative Genetics and Safety Outcomes Study in Cardiac Surgery (iPEGASUS)
The purpose of this application is to support the infrastructure of the international Perioperative Genetics and Safety Outcome Study (*i* PEGASUS), a global consortium of anesthesiology investigators who have come together in order to improve our understanding of the role of genetic variation in the response to surgery.
Role- Co-investigator
(b)(4)

NIH – National Center for Research Resources Califf (PI) 09/2006-09/2011
Core Resources: CTSI/Biomedical Informatics (sub)
The purpose of this trial is to create a clinical and translational research effort at Duke University to promote high quality standards in clinical research practice.
Role – Acting Director of Biomedical Informatics, Duke Translational Medicine Institute
Approximate amount - (b)(4)

NIA Older Americans Independence Ctrs Cohen (PI) 7/2006 – 6/2009
Claude D. Pepper Older Americans Independece Centers (OAICs)
Department of Health and Human Services Public Health Services
Role – senior investigator
The purpose of this trial is to enhance and support research and research career development in aging research through its Core resources. The central theme of OAIC is to understand and modify the multiple pathways of functional decline
Role -- senior investigator
Approximate amount – (b)(4)

Industry Contract Bolognesi (PI) 4/2006 – 4/2008
inSCOPE Orthopedic Research Fellowship Awards Program sponsored by Pfizer
Role of Intra-Operative Intracapsular Blocks in Post-Operative Pain Management following Total Knee Arthroplasty: A Double-Blinded Randomized Controlled Trial
The objective of this trial is evaluate post-operative pain control and physical therapy outcomes in primary total knee arthroplasty with the use of intra-operative posterior capsular injections of bupivicaine 0.5% used in conjunction with a single shot femoral nerve block

Role – co-investigator
Approximate amount - (b)(4

Pending Research Support

Industry Contract Shortell (PI) 4 years
EVLT vs, RFA in the treatment of superficial venous reflux
The purpose of this project is to compare safety and efficacy of these two procedures in the short and long term.
Role - Clinical epidemiologist
(b)(4)

Completed Research Support

Project V.I.D.A. Gobbi (PI) 1/2006-12/2007
(Elderly and Deficient Actively Live)
Sao Paulo State University UNESP/Rio Claro e Sao Paulo State University UNESP/Bauru
The objective of this trial is the development of equipments, tecnics and metods to provide a better quality of life to Elderly and Deficient people.
Role – co-investigator
Approximate amount – (b)(4)

NIH Witsell (PI) 2/2007 – 1/2008
NIDCD R21/R33 Phased Infrastructure Grant for Patient-Oriented Research
The purpose of this project is to create a cohort of patients with otolaryngology procedures to evaluate patient outcomes and patient safety.
Role – Co-investigator
$2,556,868

Industry contract Clem (PI) 07/2005-11/2007
American Association of Women Emergency Physicians
Identification of factors that enhance career satisfaction among practicing female emergency medicine physicians
Role: Co-investigator
Approximate amount - (b)(

The LOJER USA Grant Cook (PI) 10/2006 – 10/2007
Real-time updates of Meta-Analyses of tratment of low back pain supported by a biomedical ontology
American Academy of Orthopaedic Manual Physical Therapists.
The purpose of the grant was to provide the extension and validation of a real-time, meta-analytic software program that allows real-time analysis of trial data in absence of the complete data set and to provide real time updates on the JMMT website.
Role- Co-investigator
(b)(4

Industry Contract Nielsen (PI) 7/2004-6/2007
Society for Ambulatory Anesthesia / The Role of Dexamethasone and Anesthesia Depth in the Incidence of Postoperative Cognitive Dysfunction: - A Factorial Randomized Controlled Trial
Role: Co-investigator
Approximate amount - (b)(4)

Industry contract Kaprielian (PI) 2005-2006
Health Resources and Services Administration (HRSA) / Bioterrorism Training and Curriculum Development Program
Role: Co-investigator
Approximate amount – (b)(4)

Industry Contract Pietrobon (PI) 2005-2006
Scientific Writing Workshop using On-line Instructional Technology
Role: Principle Investigator
Approximate amount -- (b)(4)

Industry Contract Pietrobon (PI) 7/2004 --
7/2006
American Society for Surgery of the Hand / Linking Scores of the DASH and modified ASES scales: a Prospective Study
Role: Principle Investigator
Approximate amount - (b)(4

Departmental grant Klein (PI) 2004
Obesity and nocturnal oxygenation after ambulatory surgery
Role: Co-investigator
Approximate amount - (b)(4)

National Medical Fellowships/Bristol-Myers Squibb Fellowship in Academic Medicine 2004
NIH Research Fellowship -- grant T35-GM08579 from National Institute of General Medical Sciences
The impact of comorbidities in the outcomes of patients undergoing total shoulder replacement
Role: Mentor

AG11268 Turner (PI) 2004
NIH Pepper Center Grant
Validation of outcome measures for functional evaluation of patients with cervical spondylotic myelopathy
Role: Co-investigator
Approximate amount - $30,000

The American College of Rheumatology Bathia (PI) 2004
"Medical Student Summer Research Preceptorship"
Role: Mentor
Approximate amount - (b)(4)

Industry Contract Pietrobon (PI) 2003
Orthopaedic Trauma Association
Role: Principal Investigator
Approximate amount - (b)(4)

Industry Contract Pietrobon (PI) 2002
Sparrow's Systems / The integration of patient-reported and clinician-obtained data via scannable for into the Physical Therapy and Medical Record: The First Step in Evidence-Based Practice.
Role: PI
Approximate amount - (b)(4)

Institution Partnership:	**School of Medicine University of São Paulo**
Division of Enforcement:	**Department of Psychiatry**
Project Coordinator:	**Prof. Eurípedes Contantino Miguel**
Title:	Associate Professor of the Department of Psychiatry
Address:	Rua Dr. Ovidio Pires de Campos 785
Zipcode:	05403-010
City/State/Country:	São Paulo/SP/Brasil
Telephone:	+55 11 3060-8040, 3060-6962, 3069-7896
Fax:	+55 11 3069-6962
Email:	ecmiguel@usp.br

Curriculm Vitae Summary:

Degree in Medicine from the Medical School of the University of São Paulo (1982) and doctorate from the Department of Psychiatry from the School of Medicine from the University of São Paulo (1992). Currently Associate Professor of the Department Psychiatry at the University of São Paulo and Associate Adjunct Professor of the Department Psychiatry and Behavioral Sciences from Duke (USA), Coordinator for the Program of Obsessive-Compulsive Disorders (PROTOC) of the Institute of Psychiatry from the Hospital of the Clinics from the School Medicine, USP, Editor of the Brazilian Journal of Psychiatry (RBP), Vice-Chair of the Department of Psychiatry at USP. Has experience in Medicine, with emphasis in Psychiatry, focusing mainly on the following topics: obsessive compulsive disorder, Tourettes Syndrome, and other Obsessive-Compulsive related disorders.

Professor:	**Magdala de Araújo Novaes**
Title:	Professora Adjunto IV do Departamento de Medicina Clínica
Address:	Av. Prof. Moraes Rego, S/n, Cidade Universitária, NUTES, Hospital das Clínicas, 2°. andar
Zipcode:	50.670-420
City/State/State:	Recife/PE/Brasil
Telephone:	+55 81 2126-3903
Fax:	+55 81 2126-3904
Email:	magdala.novaes@nutes.ufpe.br

Curriculm Vitae Summary:

Doctorate in Bioinformatics from the Université D'Aix-Marseille II (France), National Center of Scientific Research in 1993, specialized in applied informatics from the Université de Montpellier I (France), and graduated in Computer From the Federal Univerisity of Pernambuco (UFPE) em 1987 (Brazil). Adjunct professor IV of Health Informatics of the Department of Clicnical Medicine, Founder and Coordinator of the Research and Health Information Technology group (TIS) and the Núcleo de Telesaúde (NUTES) at UFPE. Area of operation: health information and communication technology. Research: health information systems, telemedicine and telehealth, distance education in health, electronic medical records, Internet and health. Member of the Brazilian Society of Health Informatics (SBIS) and the Telehealth Committee of the Ministry of Health.

(b)(6)

Sunand Bhattacharya

Education

1987 The Ohio State University Columbus, Ohio
Master of Arts, Industrial Design (Terminal Degree in the field)
Specialization: Computer Aided Industrial Design and Animation
1982 National Institute of Design Ahmedabad, India
Professional Education Program in Industrial Design
(a five and a half years Master equivalent program)

Profile

Twenty-two years of combined experience in both, public and private post-secondary education sector, as well as industry. Thirteen years dedicated to curriculum research, design, evaluation and development.

Strengths:

- general management
- research & development
- strategic planning
- instructional design
- technology integration
- Program Evaluation
- learning principles
- team building
- International outlook
- Summative Evaluation

Professional Experience

2002 - present ITT Educational Services Indianapolis, IN
National Director of Corporate Curriculum Development
Oversee development, execution and support for all program planning and curriculum development initiatives for a $700+ million company. Full accountability for the overall strategy of new program curriculum development, and its integration into the ITT Tech system. Responsible for objective formative and summative evaluations of programs and curricula.

1999 - 2002 ITT Educational Services Indianapolis, IN
Director, Corporate Curriculum Development Department

1993 - 1999 ITT Educational Services Indianapolis, IN
Manager, Corporate Curriculum Development (Design)

1992 – 1993 Southern Illinois University Carbondale, IL
Associate Professor (Tenured) Associate Professor and Faculty-In-Charge of the Industrial Design program at Southern Illinois University at Carbondale.

1987 – 1992 Southern Illinois University Carbondale, IL
Assistant Professor Responsible for graduate and undergraduate teaching, research and academic advisement for the Industrial and Graphic Design programs

1990 – 1992 SI-Technology Center Carbondale, IL

OMB Number: 1840-0785
Expiration Date: 04/30/2006

U.S. Department of Education Budget Summary

* 1. Program

U.S.-Brazil Program

* 2. Select One: ● Lead (fiscal agent) ○ Partner

* 3. Name of the Institution/Organization:

The University of Texas Health Science Center at Houston

Project Costs Requested from FIPSE:

Budget Categories:	Project Year 1 (a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Total (e)
4. Personnel (salary & wages)	9,915.00	13,713.00	13,762.00	16,231.00	53,621.00
5. Fringe Benefits (employee benefits)	2,073.00	2,866.00	2,877.00	3,392.00	11,208.00
6. Travel	6,750.00	8,750.00	7,000.00	8,750.00	33,250.00
7. Equipment (purchase)					
8. Supplies (and materials)					
9. Contractual (enter partner totals here)	2,000.00	2,000.00	2,000.00	2,000.00	8,000.00
10. Other (equipment rental, printing, etc.)					
11. Total Direct Costs (lines 4-10)	22,738.00	27,329.00	25,639.00	30,373.00	106,079.00
12. Indirect Costs* (8% of line 11)	1,819.00	2,186.00	2,051.00	2,430.00	8,486.00
13. Mobility Stipends	0.00	23,700.00	23,628.00	22,455.00	69,783.00
14. Language Stipends	5,052.00	5,052.00	5,052.00	0.00	15,156.00
15. Subtotal of Stipends (lines 13 + 14)	5,052.00	28,752.00	28,680.00	22,455.00	84,939.00
16. Total Requested from FIPSE (lines 11 + 12 + 15) (These figures should appear on the Title Form)	29,609.00	58,267.00	56,370.00	55,258.00	199,504.00
Project Costs Not Requested from FIPSE:					
17. Lead Partner Non-Federal Funds					
18. Subcontractor(s) Partner Non-Federal Funds					
Funds Requested by Foreign Partners:					
19a. Total Requested from Canada					
19b. Total Requested from Mexico					
19c. Total Requested from Brazil	(b)(4)				
19d. Total Requested from Europe					

* Indirect Cost Information (To be completed by Your Business Office):

If you are requesting reimbursement for indirect costs on line 12, please answer the following questions:

(1) Do you have an Indirect Cost Rate Agreement approved by the Federal Government? ● Yes ○ No

(2) If Yes, please provide the following information:

* Period covered by the Indirect Cost Rate Agreement: From: 09/01/2008 To: 08/31/2012

* Approving Federal Agency: ○ ED ● Other (please specify): DHHS; Henry Williams; (214) 767-3261

(3) For Restricted Rate Programs (select one) - - Are you using a restricted indirect cost rate that:

● Is included in your approved Indirect Cost Rate Agreement? Or, ○ Complies with 34 CFR 76.564(c)(2)?

OMB Number: 1840-0785
Expiration Date: 04/30/2006

CONSORTIUM PARTNERS IDENTIFICATION FORM

* Program: U.S.-Brazil Program

* Country: U.S.

Lead Partner:

* Name:

Prefix:

* First Name: M. Sriram

Middle Name:

* Last Name: Iyengar

Suffix: Ph.D

* Name of Institution/Organization: (60 Character Limit)

The University of Texas Health Science Center at Houston

Department: (60 Character Limit)

School of Health Information Sciences

* Complete Address:

* Street1: 7000 Fannin

Street2: Suite 600

* City: Houston

County: Harris

* State: TX: Texas

State/Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 77030

Phone Number: 713-500-3976 Fax Number: 713-500-3929

Email: m.sriram.iyengar@uth.tmc.edu

CONSORTIUM PARTNERS IDENTIFICATION FORM

Partner Two:

*** Name:**

Prefix:

* First Name: Ricardo

Middle Name:

* Last Name: Peitrobon

Suffix: M.D.

*** Name of Institution/Organization: (60 Character Limit)**

Duke University Medical Center

Department: (60 Character Limit)

Surgery-Orthopaedic Surgery

*** Complete Address:**

* Street1: Box 3094 Medical Center

Street2:

* City: Durham

County:

* State: NC: North Carolina

State/Province:

* Country: USA: UNITED STATES

* Zip/Postal Code: 27710

Phone Number: 919-668-2054 Fax Number: 919-681-8886

Email: pletr007@mc.duke.edu

CONSORTIUM PARTNERS IDENTIFICATION FORM

Partner Three:

* Name:

Prefix:

* First Name:

Middle Name:

* Last Name:

Suffix:

* Name of Institution/Organization: (60 Character Limit)

Department: (60 Character Limit)

* Complete Address:

* Street1:

Street2:

* City:

County:

* State:

State/Province:

* Country:

* Zip / Postal Code:

Phone Number: Fax Number:

Email:

CONSORTIUM PARTNERS IDENTIFICATION FORM

Important: Please attach your Consortium Partners Identification Form Attachment file(s). Please remember that any files you attach must be a Pure Edge document.

1) Please attach Attachment 1

ED_FIPSEConsortiumPartnersIdentificationFormAttachment-V1.0_Novaes.xfd

2) Please attach Attachment 2

ED_FIPSEConsortiumPartnersIdentificationFormAttachment-V1.0_Miguel.xfd

OMB Number: 1840-0785
Expiration Date: 04/30/2006

CONSORTIUM PARTNERS IDENTIFICATION FORM

* Program: U.S.-Brazil Program

* Country: Brazil

Lead Partner:

* Name:

Prefix:

* First Name: Eurípedes

Middle Name: Contantino

* Last Name: Miguel

Suffix: Ph.D

* Name of Institution/Organization: (60 Character Limit)

Universidade de Sao Paulo

Department: (60 Character Limit)

Departamento de Psiquiatria

* Complete Address:

* Street1: Rua Dr. Ovidio Pires de Campos 785

Street2:

* City: Sao Paulo/SP - Brazil

County:

* State:

State/Province:

* Country: BRA: BRAZIL

* Zip / Postal Code: 05403-010

Phone Number: +55 11 3060-8040 Fax Number: +55 11 3069-6962

Email: ecmiguel@usp.br

CONSORTIUM PARTNERS IDENTIFICATION FORM

Partner Two:

* Name:

Prefix:

* First Name: Eduardo

Middle Name:

* Last Name: Massad

Suffix:

* Name of Institution/Organization: (60 Character Limit)

Universidade de Sao Paulo

Department: (60 Character Limit)

Departamento de Patologia

* Complete Address:

* Street1: Av. Dr. Arnaldo, 455, Cerqueira Cesar

Street2:

* City: Recife/PE/Brasil

County:

* State:

State/Province:

* Country: BRA: BRAZIL

* Zip/Postal Code: 01246-903

Phone Number: +55 11 3061 7435 Fax Number: +55 11 3061 7382

Email: edmassad@usp.br

CONSORTIUM PARTNERS IDENTIFICATION FORM

Partner Three:

* Name:

Prefix:

* First Name:

Middle Name:

* Last Name:

Suffix:

* Name of Institution/Organization: (60 Character Limit)

Department: (60 Character Limit)

* Complete Address:

* Street1:

Street2:

* City:

County:

* State:

State/Province:

* Country:

* Zip/Postal Code:

Phone Number: Fax Number:

Email:

OMB Number: 1840-0785
Expiration Date: 04/30/2006

CONSORTIUM PARTNERS IDENTIFICATION FORM

* Program: U.S.-Brazil Program

* Country: Brazil

Lead Partner:

* Name:

Prefix:

* First Name: Magdata

Middle Name: de Araujo

* Last Name: Novaes

Suffix: Ph.D

* Name of Institution/Organization: (60 Character Limit)

Federal University of Pernambuco

Department: (60 Character Limit)

NUTES

* Complete Address:

* Street1: Av. Prof. Moraes Rego, S/n Cidade Universitaria

Street2: Hospital das Clinicas, 2.andar

* City: Recife/PE/Brasil

County:

* State:

State/Province:

* Country: BRA: BRAZIL

* Zip / Postal Code: 50.670-420

Phone Number: +55 81 2126-3903 Fax Number: +55 81 2126-3904

Email: contato@nutes.ufpe.br

CONSORTIUM PARTNERS IDENTIFICATION FORM

Partner Two:

* Name:

Prefix:

* First Name: Oscar

Middle Name: Bandeira

* Last Name: Coutinho Neto

Suffix:

* Name of Institution/Organization: (60 Character Limit)

Universidade Federal de pernambuco

Department: (60 Character Limit)

UFPE

* Complete Address:

* Street1: Av. Prof. Moraes Rego, S/n, cidade Universitaria

Street2: NUTES, Hospital das Clinicas 3.andar

* City: Recife/PE/Brasil

County:

* State:

State/Province:

* Country: BRA: BRAZIL

* Zip/Postal Code: 50.670-420

Phone Number: +55 81 2126-3903 Fax Number: +55 81 2126-3904

Email: cursomedico.ufpe@yahoo.com.br

CONSORTIUM PARTNERS IDENTIFICATION FORM

Partner Three:

* Name:

Prefix:

* First Name:

Middle Name:

* Last Name:

Suffix:

* Name of Institution/Organization: (60 Character Limit)

Department: (60 Character Limit)

* Complete Address:

* Street1:

Street2:

* City:

County:

* State:

State/Province:

* Country:

* Zip/Postal Code:

Phone Number: Fax Number:

Email:

OMB Control Number: 1840-0785
Expiration Date: 04/30/2006

FUND FOR THE IMPROVEMENT OF POSTSECONDARY EDUCATION
INTERNATIONAL CONSORTIA PROGRAM
Project Title Form

* Program: U.S.-Brazil Program

Consortium Members - - U.S. Partners:

* Lead: M. Sriram Iyengar, Ph.D.

* Partner: Ricardo Pietrobon, M.D., Ph.D., MBA

Partner:

Consortium Members - - Foreign Partners:

* Lead: Magdala de Araujo Navaes, Ph.D.

* Partner: Eurípedes Constantino Miguel Filho

Partner:

Consortium Members - - Foreign Partners:

Lead:

Partner:

* Project Title: USA-Brazil Consortium For Education in Biomedical Informatics

* Abstract of Proposal: (1000 Character Limit)

Biomedical informatics, the application of computer science to healthcare, can greatly improve diagnostic/treatment, enhance care to the underserved. USA and Brazil are experiencing great demand for well-trained biomedical informaticians. We present a proposal for a consortium consisting of the University of Texas Health Science Center, Houston; Duke University; Federal University of Pernambuco; and University of Sao Paulo, to enhance education in Biomedical Informatics. Goals are a) to create a degree program in biomedical informatics recognized in USA and in Brazil, providing rigorous education and practical training; b) create a group of biomedical informaticians that are culturally competent and professionally expert both in the USA and in Brazil. Over three years we expect to graduate 18 individuals from each country. Program evaluation, both formative and summative is integral to the project and an external evaluator has been identified and budgeted for in the proposal.

* Select project format:

● Four-year consortia project

○ Two-year consortia project

Federal Funds Requested ($):

* Year 1:	29,609.00
* Year 2:	58,267.00
* Year 3:	56,370.00
* Year 4:	55,258.00
* Total:	199,504.00

SUPPLEMENTAL INFORMATION REQUIRED FOR DEPARTMENT OF EDUCATION GRANTS

1. Project Director

*** Name:**
M. Sriram

Iyengar

PhD

*** Address:**
7000 Fannin, Ste. 600

Harris
County

Houston

TX: Texas

77030

USA: UNITED STATES

*** Phone Number:**
713-500-3976

Fax Number:
713-500-3929

Email:
m.sriram.iyengar@uth.tmc.edu

2. Applicant Experience:

• Yes _No _ Not applicable to this program

3. Human Subjects Research

Are any research activities involving human subjects planned at any time during the proposed project Period?

_Yes • No

Are ALL the research activities proposed designated to be exempt from the regulations?

Yes Provide Exemption(s) #:

No Provide Assurance #, if available:

Please attach an explanation Narrative:

FileName MimeType

Project Narrative

Abstract Narrative

Attachment 1:
Title: Pages: Uploaded File: **5268-Abstract.pdf**

Project Narrative

Project Narrative

Attachment 1:
Title: Pages: Uploaded File: **5058-Mandatory_Project_Narrative.pdf**

PROJECT NARRATIVE

USA-Brazil Consortium for Education in Biomedical Informatics

1. Consortium Members

USA Lead: University of Texas Health Science Center at Houston, School of Health Information Sciences (UTH-SHIS). Coordinator: M Sriram Iyengar, PhD, Asst. Professor

The only School devoted to Biomedical Informatics in the USA, UTH-SHIS is well-known as a leading center for innovation and education. Focus areas of its 24 faculty are clinical informatics, computational biology, and technologies for health science education. Masters, PhD and Certificate degrees are offered. The program is highly selective and admits only the best students from all over the world. UTH-SHIS is experienced in international educational programs, offering complete courses as well as student exchange with universities in Japan, China, and Mexico under signed memoranda of understanding.

USA Partner: Duke University, Durham, NC, Dept. of Anesthesiology. Contact: Ricardo Pietronbon, MD, PhD, MBA

The venue of numerous successful healthcare informatics projects under the guidance of Dr Pietronbon, this department is the number one user of Electronic medical records for quality and research purposes within the Duke Health System. Dr Pietronbon is also the program chief of biomedical informatics. Many students this department specialize in biomedical informatics and get degrees called Master in nursing informatics. The department is already collaborating with the University of Sao Paulo in Electronic Medical Records.

Brazil Lead: Federal University of Pernambuco (UFPE), Recife, Nucleo de TeleSaude (NUTES). Coordinator, Professor Magdala de Araujo Novaes, PhD.

NUTES is a pioneering leader in biomedical informatics in Brazil. It is the only institution of its kind in the entire vast Northern region of Brazil. Its objective is to apply computing and communication technologies to improve medical care in this region and to train a cadre of experts in biomedical informatics to implement telemedicine, electronic medical records and similar technologies at healthcare facilities. It offers a very highly regarded bachelors program.

Brazil Partner: University of Sao Paulo, Sao Paulo. Contact: Euripedes Constantino Miguel Filho

One of the most respected Universities of Latin America, not only in teaching but also in research, USP offers many high-quality courses in Biomedical Informatics. The Psychiatry Department is a national center in psychiatric health informatics, and is leading the development and implementation of Electronic Medical Records in collaboration with Dr Pietronbon (Duke University) to support psychiatric health. All degree levels are offered.

2. Educational Focus: Biomedical Informatics

Today we are witnessing a phenomenon that promises to revolutionize health care and medical research globally: the integration of *Biomedical Informatics* into medical practice. This discipline, also known as Healthcare Informatics, is concerned with the collection, storage, analysis, and applications of information relating to human health and

disease. The goal of this new discipline is to apply computer science to the improvement of human health and to enhance treatment outcomes. It includes, among others, the processing of medical data into information, and then into knowledge suitable for clinical decision making, healthcare policy, design of medical systems. Currently, the hardware technologies used in biomedical informatics include computers, from mainframes to Personal Digital Assistants, and telecommunications technology, including cell phones. Software technologies include specialized databases, algorithmic methods, Artificial Intelligence, imaging, data communication/interchange protocols and a host of others. Biomedical Informatics is highly interdisciplinary and can be the focus of students whose home departments are any field of medicine, such as Nursing, Surgery, Psychiatry, Pathology, Anesthesiology. Accordingly, there are various specialties such as Nursing Informatics, Dental Informatics and so on under the main rubric of Biomedical Informatics.

3. Specific Area of Exchange

The specific areas of exchange for this program are three sub-disciplines of biomedical informatics: *Electronic Health Records, Telemedicine, and Public Health Informatics*. For each area, we will focus on education that can be applied by the student upon their return to the country of origin. These three areas are briefly described below.

Electronic Medical (Health, Patient) Records (EMRs, EHRs, EPRs) comprise a basic technology for healthcare informatics designed to bring the benefits of computer database technology to improve care and health management. Hospitals worldwide, including the USA and Brazil, are implementing EMRs in one form or the other and there will be a continued expansion of this activity into broader aspects of the hospital information

environment.

Telemedicine is concerned with effectively imparting medical care over geographically distributed locations. Medical expertise in terms of skilled physicians, nurse and specialists are always in short supply and are typically located in urban centers. To serve rural and distant populations, of which there are very substantial numbers in both the USA and especially in Brazil, various computing techniques have been developed under the rubric of Telemedicine. Depending on the telecommunications infrastructure available, telemedicine can include sophisticated video conferencing, remote sensing of patient medical parameters, analysis of ECGs, EEGGs, and numerous other applications. By enabling physicians and nurses to provide expert medical advice remotely to patients this distance-bridging technology can prevent the necessity of transporting sick individuals to and from urban medical centers, thus decreasing congestion and disruption to patients. The University of Texas, Houston is pioneering cell phone technologies to support telemedicine.

Public Health Informatics is rapidly becoming a vital tool for healthcare policy making, development of health management strategies, and enhancing public wellness. The US-based Centers for Disease Control (CDC) views PHI as a powerful technology to identify health threats early, and manage disease outbreaks and disasters such as floods, fires, terror attacks. [1] It supports public health and epidemiology by providing tools for the management, storage, analysis and dissemination of data relating to, among other items, the occurrence, prevalence, spread, geographical distribution of medical disorders. Psychiatric disorders are of particular interest to the consortium members from USP. Other interests include obesity, Type II diabetes, influenza, and water-borne illnesses, and wellness of children and women.

3.1 Justification of focus area

Due to the steadily increasing recognition of the multiple uses and benefits of Biomedical Informatics, this field is currently on a growth path with no end in sight. Health informaticians are in great demand and may work in various clinical, research, industrial, and educational environments. The US Bureau of Labor Statistics forecasts that "employment of medical records and health information technicians is expected to increase by 18 percent through 2016—faster than the average for all occupations". [2]. Note that this statistic refers to those with Bachelors degrees in biomedical informatics. (The demand for graduate professionals in this field is even greater as industries like software and insurance turn to biomedical informatics applications to enhance their revenues) In particular, both the USA and Brazil will need healthcare informatics practitioners who are capable of implementing and organizing existing systems and who can research and develop new aspects and new components of systems to meet the ever-increasing demand for biomedical informatics.

3.2 Cultural competency

In addition to the increasing need for biomedical informatics practitioners another current trend in healthcare is a growing recognition about the need for cultural competency in healthcare. Betancourt[3] points out that "Cultural competence in health care describes the ability of systems to provide care to patients with diverse values, beliefs, and behaviors, including tailoring delivery to meet patients' social, cultural, and linguistic needs. The ultimate goal is a health care system and workforce that can deliver the highest quality of care to every patient, regardless of race, ethnicity, cultural background"

Due to the increasing multi-cultural nature of both countries the medical systems in both countries will need to handle the medical needs of great ethnic and linguistic diversity. It is very important for US-origin healthcare informaticians to be able to appreciate and understand the implications of these kinds of diversities. At the same time, there is a great need in Brazil for informaticians to understand advanced biomedical informatics technologies to improve their own skills and to adapt these to Brazilian needs. Nurturing a group of biomedical informaticians that is familiar with both countries and can impart the knowledge to others is important to both the USA and to Brazil.

In their separate continents each country is the largest in terms of geography and economy. Therefore, their economies will necessarily become increasingly interrelated in all aspects including health needs. The students we are proposing to train will be able to help US technology providers such as Microsoft, Cerner, McKesson, Oracle, etc understand the Brazilian healthcare informatics needs. Program graduates can also assist such companies to improve Brazilian healthcare needs with the effective deployment of their technology.

4. Antecedents

In 2006, Dr Ricardo Pietronbon, visited the School of Health Information Sciences, University of Texas, Houston, to give a talk. The faculty he met included M Sriram Iyengar. Both found that they shared strong interests in global eHealth and biomedical informatics as well as the language/culture of Brazil. Dr Iyengar has taken university courses in Portuguese and has visited many areas there.

At the prestigious MedInfo2007 conference in Brisbane, Australia Dr Iyengar met Professor Magdala de Araujo Novaes, Director of NUTES. They discovered shared

interests in education and research in biomedical informatics.

Finally, Dr Pietronbon interested his long-time colleague Dr. Eduardo Massad of the University of Sao Paulo, known throughout South America as a leading educator and researcher in this field. He agreed to join the consortium proposal and also recruited a mutual friend, Dr Euripides Miguel, also of USP. In view of the computational nature of biomedical informatics faculty in the Department of Mathematics and Statistics at USP have also decided to join.

All these individuals share the belief that as the economies and cultures of both Brazil and the US become increasingly intertwined, healthcare will emerge as a major focus and the need for biomedical informaticians with cultural competency in the US and Brazil, will become increasingly important to both nations.

5. Curriculum

Due to the recent emergence of Biomedical Informatics as a scientific discipline an underlying emphasis of coursework in the proposed consortium is to train our graduates to effectively impart the curriculum to others, in effect becoming teachers themselves.

5.1 Educational Approach

Principles	Description	Target to be achieved/Objective
Practical focus	Courses designed to rigorously present material and enhance the students capacity to develop solutions.	Course completion

Principles	Description	Target to be achieved/Objective
Mixed e-learning and local environment instruction	Familiarize students with an environment that will be more and more pervasive over the next few years, to enhance scalability and to create a sense of team work and providing the opportunity to interact with individuals that will become role models/mentors	Build a sense of team work and scalability of the program to multiple countries
Openness	Create an educational environment that will encourage free interchange of ideas, sharing of experiences, understanding of the healthcare needs of the US and Brazil and thus	Will help in continuity of the use of tools and content learned, and encourage development of joint and unique US-Brazil solutions.
Internships at healthcare institutions	Classroom material will be applied in real-world healthcare practice and research	Better understand how biomedical informatics is applied ultimately leading to methods of improving its quality, productivity, and cost-benefit from academic, economic, and healthcare perspectives
Scalability	Educating the next generation of biomedical informaticians and teachers in USA and in Brazil	Help meet the growing demand for such individuals in both countries
Problem-based and team-centered education	Solution of common informatics challenges encountered by doing joint projects with local students.	Build lasting collaborations and help program sustainability

Table 1: Curriculum Principles

Within the educational philosophy of Table 1, the curriculum for the proposed project will be based on existing coursework and educational objectives suitably reconciled so as to prevent repetition and enhance synergies. The detailed list of courses at UTH and all consortium partners is found in an attachment to this proposal. While UTH admits only graduate students, the basic courses are designed to accommodate advanced (fourth year) undergraduates. This represents an excellent opportunity for the Brazilian students, most of whom are likely to undergraduates, to enhance their educational experience by gaining a flavor of graduate study in the USA. Additional learning opportunities are also available and required. A special focus at UTH will be EHRs, presented in the foundations course(s).

Duke University will focus primarily on the area of Public Health Informatics and Nursing Informatics related to data from Electronic Health Records. One of our central concerns is that, upon return to Brazil, students will have the skills necessary to successfully make use of electronic medical records to investigate questions that are relevant to the field of biomedical informatics and that will result in improvement of healthcare to their country. The primary goal of the programs is to create an environment that increases the number of biomedical informatics persons capable of understanding the complexity of public health data and support improvement in healthcare environment. The guiding principles include a problem based approach using open sources.

At USP, the special focus will be on Electronic Health Records as well as Public Health Informatics. This Department has many collaborations with the Institute of Mathematics and Statistics (IME) of the same University, which offers courses in Statistics and Computer Science

At UFPE-NUTES a special focus will be Telemedicine in which the department has developed specialized expertise focused on applications in the Brazilian Northern region. Another area of expertise is Public Health Informatics.

5.2 Consortium Web site

During the first year a special web site, accessible only to student, faculty and coordinators in the program will be created to enhance communications and discussions. This will have features like chat, wiki, discussions, ability to post pictures, videos, sound clips etc. There will also be an anonymous feedback facility where students will be encouraged to post candid comments regarding their experiences, suggestions, and concerns. Polls and questionnaires will periodically be presented at the web site and results stored in a database. By the end of the program period this database will be invaluable to make objective assessments of the program. The web site will also be a venue for maintaining ties between participants even after the program period ends. It will be created using the Moodle system (see http://moodle.org/). and hosted at the university of Texas. Moodle web-based software will also be used to create a course management system for the entire consortium program.

5.3 Student Experience

A major educational goal of the proposed consortium is to integrate the students experience in USA or Brazil back into their entire education. With the guidance of appropriate faculty, each student will carefully be evaluated with respect to their current academic status, courses taken, and courses needed. At the destination university the student will then attend the needed new courses. This process will ensure that repetition will be

avoided while the use of new and exciting opportunities in the other country will be maximized. Consortium members at each university will take special care to introduce incoming students to other faculty and students and encourage the foreign students to partner with local students to do course projects jointly. The Biomed informatics depts. of members of the consortium are typically small (UTH has 70 students and 18 faculty) it is expected that foreign students will be able to forge close and lasting ties with students and faculty of the institutions they visit.

Both Duke University and UTH have extensive prior experience in international education and the training of non-US students in biomedical informatics. UTH faculty conduct courses in Japan and in China where MOUs have been signed with local universities. Students from these countries routinely attend classes aloingside their US-based peers at UTH and are treated no differently. Duke University has a branch in Singapore where Dr Pietronbon regularly teaches.

5.4 Internships

While many large software companies (Cerner, McKesson, Google, Microsoft, Oracle, others) employ biomedical informaticians, the greatest need and opportunity currently arises from healthcare institutions. All four institutions in the proposed consortium are associated with large healthcare establishments. UTH is part of the Texas Medical Center, the largest medical center in the world and includes MD Anderson Cancer Center. Duke University is world-renowned center for medical care and expertise. Its Medical Center is one of the country's largest clinical and biomedical research institutions, with a health system that stretches across 32 counties in North Carolina and into neighboring

states. Duke was one of the first institutions to develop a computerized registry of patients in an interoperable fashion that produced clinical notes, database coded data for research and measured outcomes.

In Brazil, UFPE is a leading pioneer in telemedicine and center of medical expertise in the NorthEast of Brazil and, finally, the University of Sao Paulo is home to Brazil's premier medical institutes. All four routinely arrange internships within their respective medical facilities for their students, including foreign students. Students in the proposed consortium program will definitely have the same internship opportunities. For example, the University of Sao Paulo's highly rated School of Medicine offers clinical care at its Clinics and Hospital to patients from all over the region and other parts of Brazil.. These patients represent a great ethnic and sociocultural diversity, a challenge in healthcare which will be valuable cultural diversity training for the foreign students.

6. Organizational frameworks for student mobility.

6.1 Recruitment

Student recruitment into the consortium program will be done on a highly personalized basis, aided by the fact that the biomedical informatics departments all four institutions are relatively small in terms of student and faculty sizes. The project coordinators will publicize the opportunity to the students by means of personal conversations, announcements, flyers and posters (both paper and electronic). From Duke and UTH primarily graduate students will be recruited while UFPE and USP will send final year undergraduate students. Section 6.3 below explains the allocation of these students to courses in the foreign country.

6.2 Language Training

Students from Duke University will be directed towards excellent courses in Portuguese already offered there. Students from UTH will be taught Portuguese by one or more experts (including Brazilians) located in the Houston area. In Brazil, English language classes are widely available both at USP and UFPE and most students already have basics in English. These will be supplemented by additional classes.

6.3 Academic Credit Recognition Procedure

During year 1 (see proposed actions attachment) project faculty and senior administrators (Deans) will develop mechanisms for formal academic recognition of the foreign courses in the students' home institutions. This will include detailed analysis of the curricula and course content in all 4 universities. This procedure will result in a detailed *cross-institutional curriculum map* of the similarities and equivalences between the entire set of courses. Consortium faculty have already discovered that, due to differences in educational systems between the USA and Brazil, a significant number of courses ofdfered at UFPE and USP would, by virtue of their specialized content, be classified as suitable for graduate students in the USA. Conversely, many first year courses at Duke and UTH are suitable for advanced final year undergraduates from Brazil. Using this map, faculty advisors can design personalized integrated curriculum for the consortium program to meet degree requirements and ensure a full education for each student. A crucial benefit is that the personalized design will ensure that no student's degree program is unnecessarily lengthened. This map will be updated every year as needed. The procedure is sustainable and will continue even after the four year grant period.

6.4 Eligibility

Student eligibility will include the following:

1. Undergraduate or graduate students currently pursuing a college or university degree with a focus related to Biomedical Informatics applied to Public Health Informatics, Electronic Health Records, or Telemedicine. Graduate students from both Master as well as Doctorate level degrees (USA) are eligible for participation. Undergraduate students in their fourth or final year of their degree program

2. Students should be enrolled in any of the participating institutions

3. GPA at least 7.0 in a scale from 0 to 10.00 for Brazilian applicants and a GPA at least 3.0 on a scale from 0 to 4.0 for U.S. applicants;

4. For Brazilian students: Fluency in English language (a minimum of 550 points in a recent TOEFL exam, or 213 in the CBT-TOEFL)

5. Updated curriculum at the Lattes/CNPQ database (for Brazilian students)

6. Students qualifying on the above criteria will also be evaluated by means of a personal interview conducted by project coordinators and faculty with respect to the following aspects.

   - Willingness to engage in foreign travel and engage in participatory activities

   - Personal statement describing their reasons for wanting to participate in the program.

Student mobility is an integral part of the proposed consortium's educational activities providing complimentarity and synergies within the framework of Table 1. Immersion in a foreign environment is the best possible technique to create learning and understanding. The purpose is to enhance the training of the students with exposure to a wider variety of topics and environments within the basic framework of a rigorous degree program in biomedical informatics. For US-origin students, attending classes in Brazil will enhance their appreciation of the broader global scope of the discipline and the need for user interfaces, data collection, and applications to be optimally tailored to local environments and needs. These lessons easily carry over to handling diversity within the USA itself. For Brazilian students mobility is an immense opportunity to learn advanced topics in biomedical informatics and also to be immersed in two of the most world-renowned, very large, healthcare institutions, i.e., the Texas Medical Center and Duke university. For both groups the consortium program will result in increased understanding of the scope of biomedical informatics, build strong professional ties and participate in an increasingly intertwined healthcare environment between the USA and Brazil.

For each of the three years of the program following the first (planning) year, 6 students will be sent from the USA and 6 from Brazil. Activities are detailed in the following.

6.5 Support to the students in the foreign institutions

In each university the foreign exchange students will be assigned a faculty advisor as well as a department staff member to assist in basic activities so that the student can maximize their productivity and educational objectives. Assistance will be provided with respect to cultural and language aspects, being welcomed at the airport, introduction to other faculty and

students, course planning, tour of the university and local environment, help in finding housing and health insurance and similar.

7. Evaluation

Consortium faculty members are committed to stringent, effective, quantitative, qualitative and objective evaluation of the entire project. An external evaluator, Mr Sunand Bhattacharya (cv attached in the supporting documents) has agreed to serve as an external evaluation consultant to help design and perform evaluations. He has over 22 years in curriculum development experience at the University of Southern Illinois and as Director of curriculum at ITT educational services. Mr Bhattacharya has directed and managed curriculum development in numerous fields including industrial design, engineering, and healthcare. He is an expert in both program and curriculum evaluation, using formative and summation techniques, including methodology approved by ACICS (Accrediting Council for Independent Colleges and Schools, www.acics.org). He remains a consultant to ITT for curriculum/program evaluation. He has no affiliation with any of the four consortium universities.

7.1 Evaluation Plan

Constant monitoring and evaluation of the proposed consortium and its activities will be the key to ensuring its success. Formative evaluation will be performed at regular intervals through the four year project period and a summative evaluation will be performed at its close. The purpose of formative evaluation in the first year, even before students are exchanged, is to ensure that the curriculum being designed can potentially meet the programs objectives. In the next three years formative evaluation will be carried out at the

beginning of the academic year to ensure that the ensuing year will incorporate lessons learned during the previous year of the program will be incorporated into improvements. The summative evaluation performed at the end of the fourth year will be an integral part of the final report submitted to FIPSE. In addition, it will help to make the case for sustainability of the program to university administrators, educational foundations, and industrial partners.

The formative evaluations will be based on both objective and subjective criteria described below. This list will be subject to further refinement during the first, planning year of the project with the active assistance of the external evaluator.

7.1.1 Objective Criteria

1. Grades obtained by program students in relevant courses.

2. Comparison of grades earned by exchange students in the foreign county with classmates (in the same course) from that country.

3. Overall grade point average for entire course of study, adjusted for differences in US (4 point) vs. Brazilian (10 point).

4. Comparison of overall GPA of exchange students in foreign country with respect to a suitably matched group in the foreign and home countries.

5. Measured improvement in English language skills (for Brazilian students) and Portuguese language skills (for US students)

6. Future progress of students after graduation. How many entered graduate school,

obtained jobs in industry, or in academia. Both absolute numbers and percentages will be obtained and results analyzed further.

7.1.2 Subjective criteria

These will be derived from questionnaires administered to students mainly via the program web-site. Responses will be anonymized so that the evaluator and project coordinator will not know who answered a specific questionnaire. The anonymization will ensure open and frank responses. Since a major goal of the USA-Brazil FIPSE program is to enhance international understanding selected validated scales of cross-cultural empathy and understanding will be administered to the exchange students. A longitudinal design will be used in which each subject serves as his/her own control and scale measurements are obtained at the beginning and at the end of the student's visit to the other country and analyzed by means of appropriate paired comparison tests such as the Wilcoxon signed-rank (due to relatively low sample sizes). Data from the two nationalities will be analyzed separately. The scales to be administered include the Study Abroad Goals Scale (SAGS) [4] and Cross-Cultural Adaptability Inventory (CCAI). The CCAI [5] consists of 50 questions that comprise 4 subscales: Emotional Resilience, Flexibility/Openness, Perceptual Acuity and Personal Autonomy.

Lessons from each year's formative evaluation will be carefully analyzed and corrections made as deemed necessary. For example if at the end of the first year the exchange students grades do not compare favorably to those of their peers the reasons will be sought from the students and their recommendations implemented. Similarly, if the CCAI scores do not show improvement in cross-cultural competency, its sub-scores will be

carefully analyzed and the next-year's students will be given further support as needed. This could include, for example, more intensive language training in the home and foreign countries, or an extended period of stay in the foreign country prior to start of classroom studies.

In addition to the above measures, monitoring the discussion groups, and anonymous comment features of the consortium web-site will yield more informal but no-less valuable formative evaluation data. For example, if a significant number of comments reveal student's difficulties with class-room material extra efforts including special coaching may be indicated.

The final summative evaluation will use all the above data aggregated and combined across all 3 years of student exchange, accounting, as far as possible, for any differences in program design over the three years. Analysis of data and result interpretation for all years of the project will be provided in an objective and unbiased fashion by the external evaluator. Due to the small sample sizes, use of advanced Normal theory methods such as factor analysis is not indicated. Instead, contingency tables, Fisher's exact test, and non-parametric methods such as the Wilcoxon tests, Kruskal-Wallis one-way layout and similar are preferred.

8. Conclusion

At the end of the four year program period the consortium will have accumulated a wealth of knowledge relating to the experiences of students, faculty and project coordinators in the USA and in Brazil. This valuable information will be presented as papers in academic conferences and journals. In addition, the data will be made freely available to other groups

interested in furthering USA-Brazil cooperation in biomedical informatics education. Thus, our experiences will enable other groups to replicate the program.

In addition, the summative evaluation and the faculty relationships we develop among the four consortium institutions across the USA and Brazil will comprise a very strong basis for continued support for our program from our university administrators, local educational foundations and also from industry. The last group will be particularly interested in helping us continue our program as they realize that our graduates are valuable individuals who have not only USA-Brazil cross-cultural competence, but also the cognitive and inter-personal skills to expand the role of biomedical informatics to the betterment of healthcare world-wide.

9. References

1. http://www.cdc.gov/ncphi/about_phi.html

2. http://www.bls.gov/oco/ocos103.htm#outlook

3. Betancourt, J.R., Green, A.R., Carrillo, J.E. (2002) Cultural Competence in Health Care, Field Report sponsored by the Commonwealth Fund, www.cmwf.org.

4. Kitsantas, A, (2004) Studying abroad: the role of college students' goals on the development of cross-cultural skills and global understanding. College Students Journal, Sept 2004.

5. Kelley, C., & Meyers, J. (1995) Cross-intercultural Adaptability Inventory. Minneapolis, MN: National Computer Systems.

Project Narrative

Other Narrative

Attachment 1:
Title: Pages: Uploaded File: **5586-Mandatory_Mandatory_Other_Attachment.pdf**

Attachment 2:
Title: Pages: Uploaded File: **9569-Courses.pdf**

M Sriram Iyengar, PhD

Assistant Professor of Health Information Sciences

Education

- BTech. Electrical Engg. The Indian Institute of Technology, Madras
- M.Sc (Engg) Electrical Communication Engg. (Information and Communication Theory),The Indian Institute of Science, Bangalore
- M.S. (Statistics), The Ohio State University
- Ph.D. Computer Science(Distributed Computing, Artificial Intelligence), The Ohio State University.

Recent Awards

* Microsoft Research: Cellphone as Platform for Healthcare, February 2008

  Project Title: Interactive Structured Multimodal clinical guidelines on cell phones

* University of Texas Health Science Center at Houston: Young Investigator Award, 2007

Research

Siriram's research interests fall into three streams

- **Clinical Informatics**: Computational techniques to support Algorithmic medicine and medical decision-making
  - GuideView technology for authoring and presenting interactive structured multi-modal clinical guidelines for use by non-physician care providers
  - The medical algorithms project, at http://www.medal.org. (in association with John R Svirbely, MD), a web-based repository of over 11,000 scales, scores, formulae and other computational techniques
  - VITA: Visualization techniques to enhance understanding of non-linearity in medical decision-making.
- **Symbolic Systems Biology**. Mathematical and computational modeling of biological processes and pathways.
  - Signaling mechanisms in Multiple Organ Failure and other clinical consequences of trauma.
  - The morphoproteomic approach in cancer research (With Dr Robert Brown, UTH Department of Pathology)
  - Pathway Logic in signal transduction (with Carolyn Talcott, SRI International)
  - Cytoview. *In silico* representations of the morphology of biological cells (with Nagasuma Chandra and N Balakrishnan, Indian Inst. of Science, Bangalore)
- **Computer Science**: Queuing theoretic analysis and modeling of load sharing in distributed systems

Todd R. Johnson, PhD

Associate Professor of Health Information Sciences and Associate Dean for Academic Affairs

Education

- Ph.D. 1991 The Ohio State University (Artificial Intelligence)
- M.S. 1986 The Ohio State University (Computer and Information Science)
- B.S. 1984 The Ohio State University (Computer and Information Science)

Research

- Medical Device Usability and Safety
- Tools and techniques of cognitive science
- Human interface design
- Develop decision support tools
- Computer models of human problem-solving behavior and learning

Dr. Johnson is an expert in cognitive science in healthcare, an area that improves healthcare and biomedical decision making by designing processes, software, and devices that match the needs and cognitive capabilities of those who use them. His current work focuses on two areas:

1. Improving patient safety by reducing medical errors caused by poor device and software interfaces, as well as errors that arise due to pressures placed on caregivers by the healthcare system in which they work; and
2. Improving decision making and efficiency through user-centered software design and decision support systems.

Teaching

- Foundations of Health Information Sciences II
- Introduction to Cognitive Science in HI
- Cognitive Engineering in HI I
- Cognitive Engineering in HI II
- Comparative Taxonomy

Jack W Smith, MD, PhD

Dean and Professor, The University of Texas School of Health Information Sciences at Houston;
Director, Bioinformatics Component, Center for Clinical and Translational Sciences The University of Texas Health Science Center at Houston

Education

- Ph.D. 1986 Ohio State University (Computer and Information Sciences)
- M.S. 1980 Ohio State University (Computer and Information Sciences)
- M.D. 1977 West Virginia University Medical School (Medicine)
- B.S. 1973 Virginia Polytechnic Institute and State University (Physics)

Research Areas

- Artificial intelligence
- Modeling problem-solving in healthcare
- Implementation of decision support and tutoringsystems
- Modeling complex human problem-solving
- Application of cognitive science to understanding
- Human-computer interaction

Dr. Jack W. Smith was recruited from Ohio State University to become the first Chairman of the Department of Health Informatics at the University of Texas Health Science Center at Houston. He was instrumental in recruiting many of the original faculty from Ohio State University. In January 2003, he became the Interim Dean. In December 2005, Dr. Smith was appointed Dean of the School of Health Information Sciences at the University of Texas Health Science Center at Houston. He is a former team Leader of Medical Informatics and Healthcare Systems at the National Aeronautics and Space Administration (NASA) - Johnson Space Center, Houston, Texas. His work focused on the collection, storage, retrieval, analysis, and transmission of medical information related to NASA spaceflight.

Dr. Smith was appointed Director of the Bioinformatics component of the CTSA grant awarded to The University of Texas Health Science Center in 2006. He joined a large team of medical professionals who have established the Center for Clinical and Translational Sciences in partnership with The University of Texas Health Science Center at Houston, MD Anderson Cancer Center, and the Memorial Hermann Hospital System.
Dr. Smith serves as an informatics consultant to other universities seeking application for a CTSA grant.

His research interests include artificial intelligence, modeling complex problem-solving in healthcare, implementation of decision support and tutoring systems, and the application of cognitive science to understanding human-computer interaction.

Dr. Smith is a board certified in Pathology and has a doctorate in Computer Science in the area of Artificial Intelligence.

Mariana Nicol McCready

(b)(6)

EDUCATION

University of South Carolina Columbia, SC, May 2002
Bachelor of Science in Business Administration **GPA 3.75**
Major: Marketing, Specialization: International Business, Minor: Spanish

Center for Cross Cultural Studies Seville, Spain, summer 1999
Resided with Spanish family while attending full-time business program

University of Palermo Buenos Aires, Argentina (ISEP), spring 2001
Spanish language immersion targeting marketing and management techniques

Federal University of Pernambuco Recife, Brazil, January – June 2003
Resided with Brazilian family while taking intensive Portuguese courses

SKILLS

Languages: Fluent in written and oral **English, Spanish, Portuguese** (CELPE-BRAS cert.)
Computer: Proficient in both Macintosh and Windows platforms; Web-based data collection software, Google web apps, Strong working knowledge of Microsoft Office Suite, SPSS, Quickbooks, and Merlin Financial Software

WORK EXPERIENCE

Global Research Analyst — **07/05 to Present**
Research on Research Consultant — **Durham, NC**
Duke University Medical Center

- Provide consulting services for researchers at Duke University and universities abroad
- Coordinate development and dissemination of web tools for web-based data collection and project management for the Department of Surgery and clinical researchers world-wide
- Facilitate and stimulate the communication channel between end users of software (researchers) and software programmers to ensure premium software support, continuous development, and usability
- Manage software for Department of Surgery: Duke Surgery Patient Safety, an anonymous reporting system for adverse events during surgery
- Manage software for Department of Surgery: Duke Surgery Research Central, a project management system which manages the submission of grants and contracts for researchers and Surgery Central Administration Office
- Manage software for CESO: Dados Prospective, a web-based data collection software designed to collect data for single site and multi-center trials, software currently being used in Ambulatory Surgery Center, Duke University; Orthopaedic Surgery Clinics, Duke University; multi-center trials nationally and internationally
- Manage software for CESO: Dados Survey, a web-based survey collection software
- Establishing and cultivating relationships with researchers and industry sponsors for the purpose of collaborating on studies and bringing in new research funds to the university
- Translate research related documents from Portuguese and/or Spanish to English and vice versa for research collaborations with Universities and Institutions in Latin America and Europe
- Conduct meetings in English/Portuguese/Spanish in a face to face or virtual environment to expand research networks and opportunities into Latin America
- Provide training and support to researchers using CESO software to conduct research projects world-wide
- Co-authorship in articles published in medical journals

Trilingual Personal Banker — **1/04 to 07/05**
Bank of America — **Washington, DC**

Julie A Simkins

(b)(6)

Education:

University of South Carolina, Columbia — May 2002
B.S. International Marketing — GPA 3.42
Minor in Japanese

Durham Technical Community College — December 2007
Completed pre-requisite courses for nursing — GPA 4.0

Work Experience:

Research Consultant **Duke University Medical Center,** Durham NC 12/05-present

- Coordinate medical research studies
- Assist in the development and testing of medical research software
- Create alliances with international medical research teams
- Translate documents and research software programs from Portuguese to English
- Manage the submission of all documents to the Duke Institutional Review Board
- Assist in the submission of medical grants
- Co-author of several peer-reviewed publications

Owner / Teacher **One Up English School,** Sao Paulo Brazil 12/03-6/04

- Opened private English as a second language school
- Managed marketing and financial aspects of business
- Taught English as a second language to adult professionals and children

Teacher **Fisk School,** Minas Gerais Brazil 2/03-12/03

- Taught English to all levels of students
- Translated works for film and marketing reports/theses

Marketing Representative **Portamedic,** Columbia SC 6/02-1/03

- Oversaw sales and marketing for one third of SC
- Recommended medical services for prospective clients
- Offered services and support to new clientele through meetings and presentations

Skills:

- Languages: Fluent Portuguese, Basic Spanish, Japanese
- Experience writing documents for Institutional Review Boards
- Two years software testing experience for the development of medical research tools

BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Ricardo Pietrobon, MD, PhD, MBA	Associate Vice Chair and Assistant Professor, Department of Surgery and Director of Biomedical Informatics, Duke Translational Medicine Institute
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Federal University of Parana, Curitiba, PR, Brazil	MD	1988-1995	Medicine
University North Carolina at Chapel Hill	PhD	1999-2004	Epidemiology
Fuqua School of Business, Durham, NC	MBA	2004-2006	Business Administration

A. Positions and Honors.

2001-present Assistant Professor, Department of Surgery, Division of Orthopedic Surgery, Duke University Medical Center, Durham, NC
2002-present Assistant Professor, Department of Anesthesiology, Division of Ambulatory Anesthesiology, Duke University Medical Center, Durham, NC
2006-present Director of Biomedical Informatics, Duke Translational Medicine Institute

2007-present Associate Vice Chair for Systems Integration

2007- present Assistant Professor, DUKE/NUS Graduate Medical School, Singapore

B. Peer-reviewed publications (109 publications)

Research Support
Ongoing Research Support
Obesity and Nocturnal Oxygenation after Ambulatory Surgery
Respironics Sleep and Respiratory Research Foundation — Klein (PI) — 7/2007 – 6/2008
Role – co-PI / Approximate amount (b)(4)

Computer Simulation for the Optimization of Randomized Controlled Trial Performance
Synderman Foundation, Duke Clinical Research Institute (DCRI), Duke University Medical Center, Durham NC
Role – co-PI / Approximate amount (b)(4) — Shah (PI) — 6/2007 – 6/2008

Naval Health Research Center (NHRC) — Taylor (PI) — 3/2007 – 3/2009
Psychophysiological Bases of Risk Taking and Cognition Under Stress
Role – co-investigator and collaborator
Approximate amount $190,000

Australian and New Zealand College of Anaesthetists — Myles and Shaw (PI) — 1/2007 – 1/2009
International Perioperative Genetics and Safety Outcomes Study in Cardiac Surgery (iPEGASUS)
Role- Co-investigator / Approximate amount (b)(4)

NIH – National Center for Research Resources — Califf (PI) — 09/2006-09/2011
Core Resources: CTSI/Biomedical Informatics (sub)
Role – Acting Director of Biomedical Informatics, Duke Translational Medicine Institute / Approximate amount - $44,649,065

NIA Older Americans Independence Ctrs — Cohen (PI) — 7/2006 – 6/2009
Claude D. Pepper Older Americans Independece Centers (OAICs)
Department of Health and Human Services Public Health Services
Role – senior investigator / Approximate amount – (b)(4)

Industry Contract — Bolognesi (PI) — 4/2006 – 4/2008
InSCOPE Orthopedic Research Fellowship Awards Program sponsored by Pfizer
Role of Intra-Operative Intracapsular Blocks in Post-Operative Pain Management following Total Knee Arthroplasty: A Double-Blinded Randomized Controlled Trial
Role – co-investigator / Approximate amount (b)(4)

THE UNIVERSITY of TEXAS
HEALTH SCIENCE CENTER AT HOUSTON

James T. Willerson, MD
[illegible]

[illegible] PRESIDENT
[illegible] Floor
[illegible]
[illegible]

April 7, 2008

M Sriram Iyengar, PhD
Assistant Professor
School of Health Information Sciences

Dear Professor Iyengar:

I am delighted to hear that you are taking the lead role in applying for four-year support from the US Department of Education FIPSE US-Brazil program to create a consortium for biomedical informatics education including The University of Texas Health Science Center at Houston, Duke University, the Federal University of Pernambuco, and the University of Sao Paulo.

Biomedical Informatics is emerging as a vital tool to support and enhance healthcare. There is an increasing need worldwide for individuals that are well-trained in this field. In addition, being based in Houston, an increasingly diverse urban metropolis and home to the world's largest medical center focused on healthcare delivery to patients from all over the globe, I am acutely aware that our students need to develop cultural competence. Participation in the USA-Brazil curriculum which your consortium is designing will address this need between the USA and Brazil, the largest economies of North and South America respectively.

Developing an educational consortium is a complex task involving resolution of issues relating to academic recognition, student credit, fees, and related issues. Please be assured of the support of my Office in resolving these issues. This support will also be extended to exploring means to sustain this program beyond the four-year period of the grant.

Assuring you of my continued interest in your project.

Sincerely yours,

James T. Willerson, M.D.

PR/Award # P116M080023

THE UNIVERSITY of TEXAS
HEALTH SCIENCE CENTER AT HOUSTON
SCHOOL OF HEALTH INFORMATION SCIENCES

Jack W. Smith, MD, PhD
Dean

7000 Fannin Street, Suite 600
Houston, Texas 77030
Jack.W.Smith@uth.tmc.edu

713 500 3901
713 500 3906 fax

April 2, 2008

M. Sriram Iyengar, PhD
Assistant Professor
The University of Texas Health Science Center
School of Health Information Sciences
7000 Fannin, Suite 600
Houston, Texas 77030

Dear Dr. Iyengar:

I am pleased to offer my enthusiastic support for your grant application to the Department of Education's FIPSE/CPASE program entitled, "USA-Brazil Consortium for Education in Biomedical Informatics."

I understand that this project will create a joint degree program between two universities in the United States that are at the forefront of biomedical informatics - the University of Texas Health Science Center at Houston, and Duke University, as well as two major universities in Brazil - The University of Sao Paulo, and The Federal University of Pernambuco (UFPE). I strongly believe this project will provide the benefits of medical informatics to healthcare facilities, state and provincial governments, pharmaceutical companies, and others, throughout Brazil, greatly improving medical informatics education. Additionally I believe this project will enhance the understanding of USA-based students with respect to the culture, healthcare environment, and language of Brazil. As you know we have considerable experience in international biomedical informatics education in Japan, China, and Mexico. The proposed consortium with Brazilian universities fits very well with my strategy for advancing our School through international collaborations. Such programs benefit all concerned and will, in particular, enhance our school's image in the largest country and economy of South America.

Biomedical informatics is the wave of the future. However this discipline, vital to the improvement of healthcare worldwide can grow only if the current considerable dearth of well-trained informaticians can be addressed. We will certainly be able to help our colleagues in Brazil improve biomedical informatics education. At the same time our students will considerably benefit by exposure to the field in a multicultural setting.

I am aware that during the first year we will have to develop letters of understanding regarding curriculum, student credit, fees and similar issues. As you know, we have experience in these matters in an international arena and I will be glad to participate as needed to resolve these matters.

This is very important to the USA and to Houston in particular as we steadily increase in diversity. I am very excited and pleased to provide my full support for this very worthwhile project.

Sincerely,

Jack W. Smith, MD, PhD
Dean
The University of Texas School of Health and Information Sciences

JWS/gms

THE UNIVERSITY of TEXAS
HEALTH SCIENCE CENTER AT HOUSTON

OFFICE OF INTERNATIONAL PROGRAMS

7000 Fannin Street, Suite 1567
Houston, Texas 77030
internationalprograms@uth.tmc.edu
www.uth.tmc.edu/internationalprograms

713 500 3559
713 500 0136 fax

April 1, 2008

U.S. - Brazil Higher Education Consortia Program
1990 K Street, N.W., 6th floor
Washington, DC 20006-8544

To Whom It May Concern:

I am pleased that M. Sriram Iyengar, PhD, assistant professor of health information sciences at The University of Texas School of Health Information Sciences at Houston, is applying for The U.S. - Brazil Higher Education Consortia Program. The University of Texas Health Science Center at Houston has a long association with universities in Brazil including the University of Sao Paulo, Universidade de Brasilia, and Federal University of Bahia. The Office of International Programs supports Dr. Iyengar's collaborations with international universities and feels it is very important to develop a cadre of individuals that are trained in biomedical informatics who are able to easily transcend cross-cultural boundaries.

The United States and Brazil are the largest countries in terms of economy, population, and land mass in North and South America respectively; hence the need to develop an increased understanding of each other. The United States is becoming more multi-cultural and the Brazilian population in the U.S. is one of the fastest growing populations. Therefore, exchanges between the U.S. and Brazil will have a positive impact for students and faculty in both countries.

Brazilian students will benefit by visiting Houston, home of The Texas Medical Center, the largest medical center in the world. The University of Texas School of Information Science at Houston is the first and only school in the U.S. devoted to Certificate, Masters and PhD programs in health informatics. It is recognized both nationally and internationally for innovative, interdisciplinary approaches to research and education. Biomedical informatics is an emerging discipline sure to increase in importance as it improves medicine.

Our students will benefit greatly from training in Brazil to appreciate diversity, gain exposure to healthcare practices, issues and appropriate solutions in Brazil. This will

enable them to develop a global perspective on eHealth, an important goal of the educational process at The UT Health Science Center at Houston.

We will be glad to provide Dr. Iyengar with all the support he needs to develop Agreements of Cooperation and Program Agreements, curriculum sharing, language support as needed to accomplish the purposes of the projects. Training in Portuguese language for our students will be imparted by native-born speakers who regularly offer classes in the Houston area. The sustainability of the project after the four year period will likely be supported by industrial partnerships.

Should you require additional information, please do not hesitate to contact me or my office.

Sincerely,

Bryant Boutwell, Dr.P.H.
Associate Vice President
for Academic Affairs and International Programs

DukeMedicine

Department of Anesthesiology

Mark F. Newman, MD
Merel H. Harmel Professor and Chairman

April 4, 2008

U.S. - Brazil Higher Education Consortia Program
1990 K Street, N.W., 6th floor
Washington, DC 20006-8544

To Whom It May Concern:

I am writing this letter in complete support of your application entitled, "USA-Brazil Consortium for Education in Biomedical Informatics". I am delighted to provide my full support for such a significant project.

I am aware that the function of this project will be to diversify educational exchanges between the United States and Brazil in the area of Biomedical Informatics. Duke University will focus primarily on the area of Public Health Informatics related to data from Electronic Health Records. The primary goal of the Program in Public Health Informatics is to create an environment that increases the number of biomedical informatics research leading to high-quality scientific publications that can help Brazil change their healthcare environment.

I believe that a customized program for our Brazilian exchange students will provide them with the skills necessary to successfully make use of electronic medical records to investigate questions that are relevant to the field of biomedical informatics and that will result in improvement of healthcare for their country.

Furthermore, I believe that our students will benefit greatly from training in Brazil to appreciate diversity, gain exposure to healthcare practices, issues and appropriate solutions in Brazil.

I fully support the purpose of this project and I am certain that it will prove successful.

Sincerely,

Mark Newman, M.D.
Merel H. Harmel Professor and Chairman
Department of Anesthesiology
Duke University Medical Center

DUMC 3094 • Durham, NC 27710 • tel (919) 681-6646 • fax (919) 681-2923 • newma005@mc.duke.edu

Duke University
School of Medicine

Nancy C. Andrews, M.D., Ph.D.
Dean, Duke University School of Medicine
Vice Chancellor for Academic Affairs

March 28, 2008

M Sriram Iyengar, PhD
Asstistant Professor
The University of Texas Health and Science Center
School of Health Information Sciences
7000 Fannin, Suite 600
Houston, Texas 77030

Dear Dr. Iyengar:

I am pleased to provide this letter in support of your application entitled "USA-Brazil Consortium for Education in Biomedical Informatics".

I recognize that this exciting study will diversify educational exchanges between the United States and Brazil in the area of Biomedical Informatics. I strongly believe that this collaboration between two universities in the United States that are at the forefront of biomedical informatics: Duke University, and the University of Texas Health Science Center at Houston, and two major universities in Brazil, University of Sao Paulo, and Federal University of Pernambuco, will prove to be very beneficial as the students learn the growing discipline of Medical Informatics as well as a new healthcare environment, culture and language.

Biomedical Informatics will play a very significant role in the future improvement of worldwide healthcare and I would be pleased to support a project that surely promotes and improve education in this area.

You have my full support for this interesting project.

Best Regards,

Nancy C. Andrews, M.D., PhD

cc: Harvey Cohen, MD

BOX DUMC 2927
Durham, NC 27710

TEL 919.684.2455
FAX 919.684.0208

URL medschool.duke.edu

dukemedicine.org

SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE PENAMBUCO
GABINETE DO REITOR

Recife, 31st March 2008

À Coordenação de Aperfeiçoamento de Pessoal de Nivel Superior
Coordenação Geral de Cooperação Internacional, CGCI/CAPES
Ministério da Educação, anexos I e II – 2° andar
Caixa Postal 365
70359-970
Brasília-DF

Dear Sir or Madam,

We would like to confirm the support of the Universidade Federal de Pernambuco with the project entitled "USA-Brazil consortium for education in biomedical informatics" (Consorcio para Cooperação Internacional Brasil/EUA em Informática Médica) which is being submited to CAPES/FIPES by Professor Magdala de Araujo Novaes

This project will colaborate in the insertion of this university, as well as with the consolidation of the internationalization of the Nucleo de Telesaúde (NUTES)

Sincerely,

Prof. Dr. Amaro Henrique Pessoa Lins
Rector

UNIVERSIDADE FEDERAL DE PERNAMBUCO
Av. Prof. Moraes Rego, 1235, Cidade Universitária - CEP 50.670-420 - Recife-Pe - Brasil
Fone: 55 81 2126.8168 / 8006 / Fax: 55 81 2126 8029
E-mail: reit@ufpe.br

PR/Award # P116M080023

SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE PENAMBUCO
GABINETE DO REITOR

Recife, 11 de março de 2008

À Coordenação de Aperfeiçoamento de Pessoal de Nível Superior
Coordenação Geral de Cooperação Internacional, CGCI/CAPES
Ministério da Educação, anexos I e II – 2º andar
Caixa Postal 365
70359-970
Brasília-DF

Prezados Senhores,

Declaramos o apoio da Universidade Federal de Pernambuco ao Projeto de cooperação intitulado "Consórcio para Cooperação Internacional Brasil/EUA em Informática Médica" (USA-Brazil consortium for education in biomedical informatics) que está sendo submetido à chamada da CAPES/TIPSE pela Profa Magdala de Araujo Novaes

Este projeto irá colaborar na inserção desta universidade, assim como, com a consolidação da internacionalização do Nucleo de Telesaude (NUTES) e o fortalecimento do ensino da informatica em saúde nesta Universidade

Atenciosamente,

Prof. Dr. Amaro Henrique Pessoa Lins
Reitor

UNIVERSIDADE FEDERAL DE PERNAMBUCO
Av. Prof. Moraes Rego, 1235, Cidade Universitária - CEP 50.670-420 - Recife-Pe - Brasil
Fone: 55 81 2126.8118 / 8006 / Fax: 55 81 2126 8029
E-mail: reit@ufpe.br

MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE PERNAMBUCO
GABINETE DO REITOR
Av. Prof. Moraes Rego, 1235 – Cidade Universitária – Recife/PE
CEP: 50670-901 - Tel: 55 81 2126.8001/8002 Fax: 55 81 2126.8029

Recife, 31st march 2008.

À Coordenação de Aperfeiçoamento de Pessoal de Nível Superior
Coordenação Geral de Cooperação Internacional. CGCI/CAPES
Ministério da Educação, anexos I e II – 2° andar
Caixa Postal 365
70359-970
Brasília-DF

Dear Sir or Madam.

We would like to confirm that the Universidade Federal de Pernambuco recognizes and supports the binational cooperation request with the United States proposed by Professor Magdala de Araújo Novaes, entitled: "USA Brazil consortium for education in biomedical informatics" (Consórcio para Cooperação Internacional Brasil/EUA em Educação em Informática Médica). As such, the UFPE agrees with the revalidation of the credits in each course and approved by the students in mobility through this partnership.

Sincerely,

Profa. Ana Maria dos Santos Cabral
Dean of Undergraduate Studies

MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE PERNAMBUCO
GABINETE DO REITOR
Av. Prof. Moraes Rego, 1235 - Cidade Universitária - Recife/PE
CEP 50670-901 - Tel. 55 81 2126.8001/8002 - Fax. 55 81 2126.8029

À Coordenação de Aperfeiçoamento de Pessoal de Nível Superior
Coordenação Geral de Cooperação Internacional, CGCI/CAPES
Ministério da Educação, anexos I e II – 2° andar
Caixa Postal 365
70359-970
Brasília-DF

Prezados(as) Senhores(as),

Desejamos constar que a Universidade Federal de Pernambuco tem conhecimento e apóia o pedido de cooperação binacional com os Estados Unidos, feito pela Profa. Magdala de Araújo do Novaes com relação ao projeto intitulado: "Consórcio para Cooperação Internacional Brasil/EUA em Educação Informática Médica" (USA-Brazil consortium for education in biomedical informatics). Sendo assim, a UFPE concorda com o reconhecimento recíproco de créditos das disciplinas cursadas e aprovadas pelos alunos em mobilidade através desta parceria.

Atenciosamente

Profa. Ana Maria dos Santos Cabral
Pró-Reitora para Assuntos Acadêmicos

March 31, 2008

MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE PERNAMBUCO
GABINETE DO REITOR
COORDENAÇÃO DE COOPERAÇÃO INTERNACIONAL
Av. Prof. Moraes Rego, 1235 - Cidade Universitária - Recife/PE
CEP 50670-901 - Tel. 55 81 2126.8006/8118 - Fax. 55 81 2126.8029
www.ufpe.br

Letter of Endorsement

This is to confirm that the International Office of the Universidade Federal de Pernambuco (UFPE) will participate in the proposed international program FIPSE/CAPES: "USA-Brazil consortium for education in biomedical informatics" (Consórcio para Cooperação Internacional Brasil/EUA em Informática Médica) as outlined in the common proposal received from our U.S. partners: University of Texas Health Science Center at Houston and Duke University. Our Brazilian partner in this proposal is the Universidade de São Paulo (USP).

The international program FIPSE/CAPES will enable us to broaden the interaction of the Universidade Federal de Pernambuco's International Office program with the North American Community.

The program will also provide opportunities for Brazilian students and faculty to become more effective members of the international community of medical informatics. We will welcome students from US universities into our projects.

We will be glad to provide Profa. Magdala de Araújo Novaes with all the support needed to develop Agreements of Cooperation and Program Agreements, curriculum sharing, language support, credit transfer, as needed to accomplish the purposes of the projects. Students coming from the USA will be assisted with respect to Portuguese language and also to quickly participate in our coursework and student life. We will also pursue all means possible to continue the program even after the four years duration of the current project.

As International Officer of the UFPE, I will be happy to direct the participation of the office in the program.

Suzana Queiroz de Melo Monteiro
International Officer

MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE PERNAMBUCO
GABINETE DO REITOR
COORDENAÇÃO DE COOPERAÇÃO INTERNACIONAL
Av. Prof. Moraes Rego, 1235 - Cidade Universitária - Recife/PE
CEP: 50670-901 Tel. 55 81 2126.8006/8118 Fax. 55 81 2126.8029

Carta de Apoio

Confirmamos que a Coordenação de Cooperação Internacional da Universidade Federal de Pernambuco - UFPE participará do programa internacional CAPES/FIPSE: "Consórcio para Cooperação Internacional Brasil/EUA em Informática Médica" (USA-Brazil consortium for education in biomedical Informatics), como está demonstra a proposta em comum recebida dos nossos parceiros americanos, a University of Texas Health Science Center em Houston e a Duke University. O nosso parceiro brasileiro nesse projeto é a Universidade de São Paulo.

O programa internacional CAPSE/FIPSE ampliará a interação da UFPE, através do setor de Cooperação Internacional, com a comunidade Norte Americana.

O programa também proporcionará oportunidades para estudantes e professores brasileiros se tornarem membros mais efetivos da comunidade internacional de Informática Médica. Nós receberemos os estudantes das universidades americanas nos nossos projetos.

Ficaremos contentes em oferecer a Profa. Magdala de Araújo Novaes todo o suporte necessário para desenvolver os Acordos de Cooperação e Acordos do Programa, compartilhar o currículo, oferecer suporte lingüístico, transferência de créditos como necessário para atingir os objetivos do projeto. Os alunos que virão dos EUA serão assistidos no que diz respeito à Língua Portuguesa e, também, participar da vida acadêmica. Nós tentaremos fazer de tudo para continuar com o programa mesmo depois dos 4 anos de duração do projeto atual.

Como Coordenadora da Cooperação Internacional da UFPE ficarei feliz em gerenciar a participação do escritório no programa.

Recife, 31 de março de 2008.

Suzana Queiroz de Melo Monteiro
Coordenadora de Cooperação Internacional

SERVIÇO PÚBLICO FEDERAL
Universidade Federal de Pernambuco
Centro de Ciências da Saúde
COORDENAÇÃO DO CURSO MÉDICO

Recife, 07 de Abril de 2008.

Do: Prof. Oscar Bandeira Coutinho Neto
Coordenador do Curso Médico

À: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior
Coordenação Geral de Cooperação Internacional, CGCI/CAPES
Ministério da Educação, anexos I e II - 2º andar
Caixa Postal 365
70359-970
Brasília-DF

Prezados Senhores,

O Curso de Graduação da Universidade Federal de Pernambuco, tem o prazer de participar da proposta "Consórcio para Cooperação Internacional Brasil/EUA em Educação em Informática Médica aprimorando a educação em informática médica: treinamento em desenvolvimento, implantação e otimização do uso de sistemas de Prontuário Eletrônico do Paciente e da Telemedicina para melhorar a qualidade do atendimento em saúde" para o Programa CAPES/FIPSE. Esta proposta foi aprovada por unanimidade pelo Colegiado deste curso em 03 de abril de 2008.
Empenharemos nossos esforços para que este projeto alcance grande sucesso, e declaro que o nosso curso reconhecerá os créditos obtidos nas disciplinas dos programas que compõem esse consórcio.

Atenciosamente,

Prof. Oscar Bandeira Coutinho Neto
Coordenador do Curso Médico

Prof. Marcelo Sabbatini da Rocha Pessôa
Vice-Coordenador do Curso de
Medicina UFPE
Siape: 0387251

SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE PERNAMBUCO
DEPARTAMENTO DE MEDICINA CLÍNICA

Of.nº 021/08-DMC Recife. 09 de abril de 2008

Da: Profa Jocelene Tenório Albuquerque Madruga Godoi
Chefe do Depto. de Medicina Clínica
A : Coordenação geral de Cooperação de Nivel Superior
Coordenação Geral de Cooperação Internacional, CGCI/CAPES
Ministério da Educação, anexos I e II – 2º andar Caixa Postal 365
Brasília-DF - CEP 70359-DF

Em face da premência de tempo, encaminho a essa Coordenação., "ad referendum" do Pleno do Departamento de Medicina Clínica, o Projeto "Consórcio para Cooperação Internacional Brasil/EUA em Informática Médica aprimorando a educação em informática médica: treinamento em desenvolvimento, implantação e otimização do suo de sistemas de Prontuário Eletrônico do Paciente e da Telemedicina para melhorar a qualidade do atendimento em saúde", para o programa CAPES/FIPSE, sob a Coordenação da Profa. Magdala de Araújo Novaes, lotada neste Departamento.

Atenciosamente

Profa. Jocelene Tenório Albuquerque Madruga Godoi
Chefe do Departamento. de Medicina Clínica

UNIVERSIDADE FEDERAL DE PERNAMBUCO
CENTRO DE CIÊNCIAS DA SAÚDE
Av. Prof. Moraes Rego, s/n
50670-901 - Cidade Universitária - Recife-PE
Tel. 81-21268568 - 21268500
www.ufpe.br/ccs
gabdiretor@ufpe.br

Recife, 04 de abril de 2008.

Of. 39/2008 - CCS

Para: À Coordenação de Aperfeiçoamento de Pessoal
Coordenação Geral de Cooperação Internacional, CGCI/CAPES

De: Prof. José Thadeu Pinheiro
Diretor do CCS

Prezados Senhores,

Declaramos o apoio da diretoria do Centro de Ciências da Universidade Federal de Pernambuco ao Projeto de cooperação intitulado "Consórcio para Cooperação Internacional Brasil/EUA em Educação em Informática Médica" (USA-Brazil consortium for education in biomedical informatics) que está sendo submetido à chamada da CAPES/FIPSE pela Profa. Magdala de Araújo Novaes.

Este projeto irá colaborar na inserção desta Universidade, assim como com a consolidação da internacionalização do Núcleo de Telesaúde (NUTES) e o fortalecimento do ensino da informática em saúde nesta Universidade.

Atenciosamente,

Prof. José Thadeu Pinheiro
Diretor do CCS

Prof. José Thadeu Pinheiro
Diretor do CCS
UFPE

À Coordenação de Aperfeiçoamento de Pessoal
Coordenação Geral de Cooperação Internacional, CGCI/CAPES
Ministério da Educação, anexos I e II - 2º andar
Caixa Postal 365
Brasília - DF
70359-970

UNIVERSIDADE DE SÃO PAULO

São Paulo, 10 de abril de 2008.

Coordenação Geral de Cooperação Internacional CGCI/CAPES
Ministério da Educação – Anexos I e II – 2 º andar, sala 205, Caixa Postal 365
CEP 70359-970, Brasília, DF., Brasil

Declaro meu apoio ao projeto "**Consórcio para Cooperação Internacional Brasil/EUA em Educação em Informática Médica** Aprimorando a Educação em Informática Médica: treinamento em desenvolvimento, implantação e otimização do uso de sistemas de Prontuário Eletrônico do Paciente e da Telemedicina para melhorar a qualidade do atendimento em saúde", coordenado pelo Dr. Euripedes Constantino Miguel Filho (Coordenador Principal) e pelo Dr. Eduardo Massad (Coordenador Adjunto), que será submetido ao programa CAPES/FIPSE. Este projeto envolve a formação de um consórcio entre dois dos melhores centros de educação em informática médica nos EUA, Universidade de Duke e o Centro de Ciências da Saúde da Universidade do Texas em Houston, e duas das melhores universidades do Brasil, a Universidade de São Paulo e a Universidade Federal de Pernambuco, para criar um programa conjunto que irá melhorar significativamente o ensino de informática médica no Brasil, e também reforçará a compreensão dos alunos dos EUA com relação à cultura, saúde ambiental e idioma do Brasil.

Tal iniciativa está afinada com o objetivo do programa CAPES/FIPSE, que é o de promover o intercâmbio e a cooperação em nível de graduação por meio de consórcios universitários binacionais, a fim de auxiliar a inserção dos cursos de graduação das instituições de ensino superior brasileiras no cenário internacional, mediante a modernização curricular, o reconhecimento mútuo de créditos e o intercâmbio docente/discente.

Não serão cobradas taxas acadêmicas de qualquer natureza por parte da USP aos alunos envolvidos.

É com grande prazer que a Universidade de São Paulo participa deste projeto, uma vez que este vem colaborar para o avanço da qualidade de nosso ensino, movimento sempre perseguido por nossa instituição.

Atenciosamente,

Suely Vilela, Ph.D.
Reitora da Universidade de São Paulo

Por Delegação da Sr., Reitora
Art. 42 do Estatuto da USP
FRANCO MARIA LAJOLO
Vice-Reitor

Fls.

FACULDADE DE MEDICINA
da Universidade de São Paulo

Processo: **08.1.00523.05.3 (nº Doc. Mercúrio Web 16401)**
Interessado: Faculdade de Medicina
Assunto: Consórcio para Cooperação Internacional Brasil/EUA em Educação em Informática Médica

INFORMAÇÃO

Aprovo "Ad Referendum" da Congregação a participação da Faculdade de Medicina no Projeto "**Consórcio para Cooperação Internacional Brasil / EUA em Educação em Informática Médica**" a ser submetido ao Programa CAPES/FIPSE. Este projeto envolve a formação de um consórcio entre dois dos melhores centros de educação em informática médica nos EUA, Universidade de Duke e o Centro de Ciências da Saúde da Universidade do Texas em Houston, e duas Universidades do Brasil a USP e a Univ. Federal de Pernambuco, para criar programa conjunto que irá melhorar o ensino de informática médica no Brasil e reforçará a compreensão dos alunos dos EUA com relação à cultura, saúde ambiental e idioma do Brasil.

São Paulo, 03 de abril de 2008.

Prof. Dr. MARCOS BOULOS
Diretor da FM

Av. Dr. Arnaldo, 455 Cerqueira César – CEP 01246-903 São Paulo – SP
Tel.: 3061-2355 – Fax: 3061-7592 e-mail: fm@edu.usp.br

MEMORANDUM

ITT Educational Services, Inc.

To: Dr. M. Sriram Iyengar

From: Sumand Bhattacharya, National Director Date: April 13, 2008

Subject: External Program Evaluator Copies:

Dear Professor Iyengar

Thank you for the invitation to be part of your project. I would be very pleased to serve as an External Program Evaluator for the proposed US-Brazil Educational Consortium to improve Biomedical Informatics Education.

As earlier discussed, my interest in curriculum development as applicable to the advancement of healthcare as well as information technology education lends itself closely to the overall outcomes of your proposal. As the National Director of Corporate Curriculum Development for ITT Educational Services, I have been instrumental in developing as well as evaluating program content for various accrediting bodies as well as for the National Skills Standards committees. Most recently, in response to the current national need for healthcare professionals, I led a team of curriculum specialists to collaborate with a prominent publishing house, and the American Health Information Association, to create and implement Health Information Technology undergraduate programs in various parts of the United States. These programs are currently being offered in eleven different ITT Technical Institute locations spread nationally. I am excited by the prospects of the proposed consortium. There is a definite need for such collaborative ventures.

I look forward to the success of your proposal and our future interaction. Please do not hesitate in contacting me if you have any further questions.

Sincerely,

Sumand Bhattacharya
National Director
Corporate Curriculum Development
ITT Educational Services, Inc.

And

Founder and Principle
Arjuna Learning Designs, LLC.

5975 Castle Creek Parkway, N. Dr., P.O. Box 50466, Indianapolis, IN 46250-0466
Telephone (317) 594-9499

The goals of this project in the coming years will be reached by the following strategies:

Year 1

This year will be devoted to establishing formal agreements among the participating US and Brazil universities including: memoranda of understanding, recognition of course credit, exemption of fees and tuition, defining criteria for enrollment, reconciling course content, identifying strength areas, socio-cultural and language aspects. A regular schedule of web and teleconferences will be established between principals (Deans, faculty) and travel schedules to/from US and Brazil will also be arranged. The agreements will be recorded in a master consortium agreement that will be signed by university administrators. The university teams will participate in the kickoff FIPSE/CAPES Annual Meeting held in the United States. During this first year, strategies for student selection and recruitment will be developed by each participating institution. Particular attention will be paid to identifying resources and establishing a schedule for language training (Brazilian Portuguese for US-based students and English for Brazilian students) that will be utilized throughout the grant period. By the conclusion of the first year, the first round of students will be selected in both USA and Brazil.

From UTH, Professors Johnson will make one trip and Professors Iyengar and Smith will make two trips each to Brazil, to meet high ranking administrators and Consortium faculty at University of Sao Paulo and the Federal University of Pernambuco.

From Duke University, Professor Pietrobon, Ms Mariana Macready and Ms Julie Simkins will each make one trip to Brazil. Professor Pietrobon will also meet high ranking administrators and Consortium faculty at University of Sao Paulo and the Federal University of Pernambuco and Ms Macready and Ms Simkins will each accompany faculty since they are fluent in Portuguese.

During the first year a special web site, accessible only to student/faculty program participants will be created to enhance communications and discussions. This will have features like chat, wiki, discussions, ability to post pictures, videos, sound clips etc. There will also be an anonymous feedback facility where students will be encouraged to post candid comments regarding their experiences, suggestions, and concerns. Polls and questionnaires will periodically be presented at the web site and results stored in a database. By the end of the program period this database will be invaluable to make objective assessments of the program. The web site will also be a venue for maintaining ties between participants even after the program period ends.

The project faculty will meet with the external evaluator to develop formative evaluations. The cross-institutional curriculum map(see Section 6.3) of the main narrative will be developed by US and Brazilian faculty incorporating suggestions from the formative evaluation.

Year 2

The year will begin with selection of the 2nd round of students. The first round of student exchange will be initiated by previously selected 1st round students attending prescribed courses in their respective universities and participating in language training. A group of 6 U.S. students (3 from UTH, 3 from Duke) will travel to UFPE or USP (as assigned by their faculty advisors) in Brazil from August – December (optionally students can also travel earlier in June, to utilize that semester effectively in language and cultural immersion). US and Brazilian students will together take regular courses at the host institutions in Brazil. The combined group of US and Brazilian students will travel to the U.S. from January to June (with the option for the Brazilian students to stay through the summer, again for language/culture immersion). During the Spring semesters at Duke and UTH the combined US/Brazilian student teams will continue work on joint projects, but at the US host institutions, supervised by both the U.S. and Brazilian academic advisors. Participants at Duke and at UTH will meet on two week occasions when UTH students travel to Duke and vice versa for social and academic exchange/coordination. Most courses at UTH end in a poster day where teams of students present research projects. Teams will be chosen to include a mix of both US and Brazilian students. This process will enhance team-building and cultural exchange. Faculty from all institutions will visit each other's institutions to review progress. The quality of academic learning and cultural activity will be monitored by faculty of all institutions and any issues will be identified and corrected early. Monitoring will be done by individual observation, subjective and objective criteria (see Section 7 in main narrative) as well as by content and comments on the web site. Final year students will be encouraged to consider graduate school. At the end of the first year, the faculty and advisors from each institution will participate in the FIPSE/CAPES Annual Meeting held in Brazil, review progress and identify steps to correct any perceived deficiencies.

Towards the end of the year the faculty will gather evaluation data and statistics (see Section 7 of main narrative), meet with the external evaluator, review objective/subjective data and perform another formative evaluation. Suggestions from this procedure will be incorporated into next year's planning and course/curriculum design.

From UTH a total of five trips to Brazil will be made by these faculty. The travelers will be identified later depending on the particular needs of the trip and other faculty schedules. Purpose is to meet counterparts in Brazil, monitor and discuss consortium progress, resolve ongoing issues if any. One of these trips will be for three faculty to, in addition to meetings with consortium members, to attend the mandatory FIPSE/CAPES meeting.

From Duke University, Professor Pietrobon, Ms Mariana Macready and Ms Julie Simkins will each make one trip to Brazil. Professor Pietrobon will meet Consortium faculty at University of Sao Paulo and the Federal University of Pernambuco and Ms Macready and Ms Simkins will each accompany US students since they are fluent in Portuguese.

Year 3

The second student exchange will follow the 2nd year's program as described above, with any needed adjustments as discovered. The third group of students will be recruited and prepared with respect to language. US and Brazilian faculty and advisors will attend in the FIPSE/CAPES Annual Meeting held in the United States. Faculty exchange will also occur.

Towards the end of the year the faculty will gather evaluation data and statistics (see Section 7 of main narrative), meet with the external evaluator, review objective/subjective data and perform another formative evaluation. Suggestions from this procedure will be incorporated into next year's planning and course/curriculum design.

From UTH, a total of four trips to Brazil will be made by faculty. The travelers will be identified later depending on the particular needs of the trip and other faculty schedules. Purpose is to meet counterparts in Brazil, monitor and discuss consortium progress, resolve ongoing issues if any.

From Duke University, Professor Pietrobon, Ms Mariana Macready and Ms Julie Simkins will each make one trip to Brazil. Professor Pietrobon will meet Consortium faculty at University of Sao Paulo and the Federal University of Pernambuco and Ms Macready and Ms Simkins will each accompany US students since they are fluent in Portuguese

Year 4

The last group of students will participate in the exchange program. Student evaluations and reports detailing the success of the program will be prepared using the web-based database and other data. The faculty will meet with the external evaluator do prepare the summative evaluation. The final report will contain the highlights of the project, strengths and weaknesses and recommendations to maintain and advance the university relationships. The final report will be freely available. We also anticipate several papers for publications in journals relating to biomedical education and biomedical informatics. Faculty and advisors and selected students will attend the FIPSE/CAPES Annual Meeting held in Brazil.

From UTH A total of five trips to Brazil will be made by faculty. The travelers will be identified later depending on the particular needs of the trip and other faculty schedules.. Purpose is to meet counterparts in Brazil, monitor and discuss consortium progress, resolve ongoing issues if any and, most importantly identify source of funding for continued sustainability of the Consortium. One of these trips will also be to attend the mandatory FIPSE/CAPES meeting.

From Duke University, Professor Pietrobon, Ms Mariana Macready and Ms Julie Simkins will each make one trip to Brazil. Professor Pietrobon will meet Consortium faculty at University of Sao Paulo and the Federal University of Pernambuco and Ms Macready and Ms Simkins will each accompany US students since they are fluent in Portuguese

USA-Brazil Consortium for Education in Biomedical Informatics

Personnel

External Evaluator : Sunand Bhattacharya, MA, Indianapolis, IN, USA

University of Texas Health Science Center at Houston, School of Health Information Sciences

M Sriram Iyengar, PhD, Assistant Professor (Project Director)

Jack W Smith, MD, PhD, Professor and Dean

Todd Johnson, PhD, Associate Professor. Associate Dean for Academic Affairs

Duke University, Dept. of Anesthesiology

Ricardo Pietrobon, MD, PhD, MBA (Project Director)

Julie Simkins, BS, Fluency in oral and written Portuguese

Mariana Macready, BS, Fluency in oral and written Portuguese

Universidade Federal de Pernambuco, Nucleo de Telesaude (UFPE-NUTES), and School of Medicine

Magdala de Araújo Novaes, PhD, Professor and Director UFPE-NUTES (Project Director)

Marcello Ramalho de Mello, BS, Professor

Oscar Bandeira Coutinho Neto, MPH, Professor, Medical Course Coordinator

Rodrigo Cariri Chalegre de Almeida, MD, Professor

Adriana Paula de Andrade Costa e Silva, DDS, Professor

Edmundo Machado Ferraz, MD, Professor

Sandra Teresa de Sousa Neiva Coelho, PhD, Professor

Universidade de Sao Paulo, Dept. Of Psychiatry, Dept. Of Pathology, and Inst. Of Mathematics and Statistics

Eurípedes Contantino Miguel, MD, Associate Professor (Project Director)

Eduardo Massad, MD, Professor

Carlos Alberto de Bragança Pereira, PhD, Professor,

Ariane Machado Lima, MS, Researcher

João Eduardo Ferreira, PhD, Professor

Chao Lung Wen, MD, Associate Professor

4.2. Equipe USP - Personnel

Institution Partnership:	**School of Medicine University of São Paulo**
Division of Enforcement:	**Department of Psychiatry**
Project Coordinator:	**Prof. Eurípedes Contantino Miguel**
Title:	Associate Professor of the Department of Psychiatry
Address:	Rua Dr. Ovidio Pires de Campos 785
Zipcode:	05403-010
City/State/Country:	São Paulo/SP/Brasil
Telephone:	+55 11 3060-8040, 3060-6962, 3069-7896
Fax:	+55 11 3069-6962
Email:	ecmiguel@usp.br

Curriculm Vitae Summary:

Degree in Medicine from the Medical School of the University of São Paulo (1982) and doctorate from the Department of Psychiatry from the School of Medicine from the University of São Paulo (1992). Currently Associate Professor of the Department Psychiatry at the University of São Paulo and Associate Adjunct Professor of the Department Psychiatry and Behavioral Sciences from Duke (USA), Coordinator for the Program of Obsessive-Compulsive Disorders (PROTOC) of the Institute of Psychiatry from the Hospital of the Clinics from the School Medicine, USP, Editor of the Brazilian Journal of Psychiatry (RBP), Vice-Chair of the Department of Psychiatry at USP. Has experience in Medicine, with emphasis in Psychiatry, focusing mainly on the following topics: obsessive compulsive disorder, Tourettes Syndrome, and other Obsessive-Compulsive related disorders.

Professor:	**Eduardo Massad**
Title:	Professor Titular do Departamento de Patologia
Address:	Av. Dr. Arnaldo, 455, Cerqueira César
Zipcode:	01246-903
City/State/Country:	São Paulo/SP/Brasil
Telephone:	+55 11 3061 7435
Fax:	+55 11 3061 7382
Email:	edmassad@usp.br

Curriculm Vitae Summary:

Degree in Medicine from the School of Medicine at the University of São Paulo (1979), graduate degree in Physics from the Institute of Physics at the University of São Paulo (1984), docturate in Epidemiology from the School of Veterinary Medicine at the University of São Paulo (1984), post doctorate from the University of London (1986), post doctorate from The University Of Sussex (1986) and post doctorate from the International Center For Theoretical Physics (1986). Currently Professor of the University of São Paulo, Researcher with the Sao Paulo Amparo Foundation of Research, Researcher with the Natinoal Council of Scientific Development and Technology, Chartered Scientist with Institute of Mathematics and its Applications and Honorary Professor at the University of Cambridge. Has experience in Public Health, with an emphasis in Epidemiology. Head of the Medical Informatics at FMUSP.

Professor:	**Carlos Alberto de Bragança Pereira**
Title:	Professor of the Matematics and Statistics Institute
Address:	Rua Conselheiro Brotero, 1070, apt 7, Santa Ceellia
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City/State/Country:	São Paulo/SP/Brasil
Telehone:	+55 11 3091-6187
Fax:	+55 11 3091–6129/3091-6130
Email:	cadebp@gmail.com

Curriculm Vitae Summary:

Degree in Statistics from the National Schol of Statistics Sciences (1968), graduate degree in Statistics from the University of São Paulo (1971) and a doctorate in Statistics - Florida State University (1980). Obtaine title of Full Professor in 1984 and was approved in a public admission exam for Full Professor in 1988. Professor at the University of São Paulo since 1990. Has experience in Probability and Statistics, with an emphasis on

Fundamentals of Statistics, focusing mainly on medical, biological and financial applications. Preferred areas of study are Bayesian Prediction, Tests of Hypothesis and Bioinformatics. Current directs the Bioinformatics Core at USP and is the Principle Investigator of the project FAPESP. Has participated and continues to participate in many admission committees in the teaching career, in defending a thesis for a masters or doctorate degree. Committee Member at USP as well as in other Brazilian Universities and internationally in Portugal, Chile and the USA. Acted as an OEA observer in several elections in Latin America.. Presentation in Congress wer enot listed to avoid duplicating relevant work information. Acts as and ad hoc consultant for CNPq, CAPES and FAPESP. Productivity Index of H is 12!

Reasearcher:	**Ariane Machado Lima**
Title:	Researcher
Address:	Av. Profa. Ida Kolb, 225, bloco Bracuy, apto 182
Zipcode:	02518-000
City/State/Country:	São Paulo/SP/Brasil
Telephone:	+55 11 3856-9272
Fax:	+55 11 3069-6962
Email:	ariane.machado@gmail.com

Curriculm Vitae Summary:

Degree in Computer Science from the University of São Paulo (1998), masters degree in Computer Science from the University of São Paulo (2002)and doctorate in Bioinformatics from the University of São Paulo (2006). Currently completing a post doctorate degree at the University of São Paulo. Has experience in Computer Science with an emphasis on Computer Science, focusing mainly on the following topics: bioinformátics, RNAs non-codifying, classifications of sequence and stochastic grammar.

Professor:	**João Eduardo Ferreira**
Title:	Professor Doutor do Instituto de Matemática e Estatística
Address:	Rua do Matão, 1010
Zipcode:	05508-090
City/State/Country:	São Paulo/SP/Brasil
Telephone:	+55 11 3091-6172
Fax:	+55 11 3091-6134
Email:	jef@ime.usp.br

Curriculm Vitae Summary:

Bacherlors degree in Physics- Option-Computational Physics
From the University of São Paulo (1988), graduate degree in Pedagogy
From the Federal University of São Carlos (1989), masters (1991) and doctorate (1996) in-Computational Physics from the University of São Paulo. Currently a professor of the Department of Comupatation Institute of Mathmatics and Statistics at the University of São Paulo. Areas of interest: database modeling; scientific workflows, integration of databases, data warehouse, algorithms for data sincronization.

Professor	**Chao Lung Wen**
Title	Professor Associado do Departamento de Patologia
Address	Av. Dr. Arnaldo, 455 - Sala 2105 - 2o Andar
Zipcode	01246-903
City/Stae/Country:	São Paulo/SP/Brasil
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Email:	chaolung@terra.com.br

Curriculm Vitae Summary:

Doctorate in Pathology- Telemedicine from the School of Medicine at USP (2000). Currently a Physician - I - LIM HC-FMUSP at the Hospital of Clinics at FMUSP / SP and Professor - MS-5 at the School of Medicine at USP. Has experience in the area of Medicine. focusing mainly on the following topics: Diagnostic Support, Internet based Education, Tele- assistance, Tele-education Telemedicine and Eletronic Tutor - Cybertutor.

4.1. Equipe UFPE - Personnel

Professor:	**Magdala de Araújo Novaes**
Title:	Professora Adjunto IV do Departamento de Medicina Clínica
Address:	Av. Prof. Moraes Rego, S/n, Cidade Universitária, NUTES, Hospital das Clínicas, 2°. andar
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Curriculm Vitae Summary:

Doctorate in Bioinformatics from the Université D´Aix-Marseille II (France), National Center of Scientific Research in 1993, specialized in applied informatics from the Université de Montpellier I (France), and graduated in Computer From the Federal Univerisity of Pernambuco (UFPE) em 1987 (Brazil). Adjunct professor IV of Health Informatics of the Department of Clicnical Medicine, Founder and Coordinator of the Research and Health Information Technology group (TIS) and the Núcleo de Telesaúde (NUTES) at UFPE. Area of operation: health information and communication technology. Research: health information systems, telemedicine and telehealth, distance education in health, electronic medical records, Internet and health. Member of the Brazilian Society of Health Informatics (SBIS) and the Telehealth Committee of the Ministry of Health.

Professor:	**Oscar Bandeira Coutinho Neto**
Title:	Medical Course Coordinator
Address:	Av. Prof. Moraes Rego, S/n, Cidade Universitária, NUTES, Hospital das Clínicas, 3°. andar
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City/State/Country:	Recife/PE/Brasil
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Fax:	+55 81 2126-3904
Email:	cursomedico.ufpe@yahoo.com.br

Curriculm Vitae Summary:

Received a masters in Public Health- Núcleo de Estudos de Saúde Coletiva (FIOCRUZ 1998), specialized in Public Health (FIOCRUZ 1980), Employee Health (UFPE 1981) and Occupational Health (Instituto Histradut Israel 1995). Currently the Course Coordinator at the Federal University of Pernambuco. Coordinator of the Family and Community Medicine Residence Program. Coordinatres the Reference Center for Employee Health at Clinical Hospitals at UFPE. Former leader of the Department of Social Medicine from October 2004 to October 2007. Has experience in Public Health, with an emphasis on the employee health, focusing mainly on the following topics: employee health, basic health care, hemocenters, management services, medical education and family health.

Professor:	**Adriana Paula de Andrade Costa e Silva**
Title:	Professora Adjunto do Departamento de Medicina Social
Address:	Departamento de Medicina Social – Centro de Ciências da Saúde, Av. Prof. Moraes Rego, s/n – 1° andar, Cidade Universitária, Recife - PE
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Curriculm Vitae Summary:

Masters in Professional Ethics and Legal Dentistry from the University of Sao Paulo (USP); Doctorate in Oral Diagnosis, sub-area Radiology from USP;. Adjunct Professor of the Department of Social Medicine at UFPE, coordinator of the subjects Health and Society, 1st period of Medicine, Ethics and

Dentistry, 4th period of Physiotherapy and Legal Dentistry 2, 9th period of Dentistry; Coordinator of the Program for Monitoring the Department of Social Medicine; Coordinator of the Project Extension Environmental Health and Body = quality of life, held in the Penal Colony of Recife; Captain of the Office group of Dentists PMPE and has a BS in Law from the Faculty Integrated Faculty of Recife.

Professor:	**Edmundo Machado Ferraz**
Title:	Professora Titular em Cirurgia do Departamento de Cirurgia
Address:	Av. Prof. Moraes Rego, S/n, Cidade Universitária, Serviço de Cirurgia, Hospital das Clínicas
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Fax:	+55 81 2126-
Email:	edferraz@truenet.com.br

Curriculm Vitae Summary:

Degree in Medicine from the Federal University of Pernambuco (1963), Doctorate and Free-Teaching in Medicine from the Federal University of Pernambuco (1971-75). Post Doctorate in the Departament of Surgery at Guy's Hospital, University of London (1975-76). Consultant of the World Health Organization and Harvard Univerisity (Project Safe Surgery Save Life), Professor by tender of Surgical Technique (1987) and Digestive Tract Surgery (1990) from the Federal University of Pernambuco. Has experience in Medicine, with an emphasis on Gastroenterology Surgery, focus mainly on the following topics: portal hypertension surgery, infection in surgery, control of infection, intraabdominal sepsis, antibiotics and morbid obesity. Founder and President of the Center of Studies Professor Eduardo Wanderley Filho, founded in 1997, nonprofit public entity to support the service of Abdominal Surgery UFPE. President elect (2008-2009) of the Brazilian College of Surgeons.

Professor:	**Sandra Teresa de Sousa Neiva Coelho**
Title:	Professora Titular em Nefrologia do Departamento de Medicina Clínica
Address:	Av. Prof. Moraes Rego, S/n, Cidade Universitária, 5°. Andar, Hospital das Clínicas, Serviços de Nefrologia
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Fax:	+55 81 2126-3734
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Curriculm Vitae Summary:

Degree in Medicine from UFPE; Residence in Clinical Medicine, Hospital of the Clinics at the University of São Paulo de Ribeirão Preto-SP; Masters in Nefrology, Federal University of São Paulo, EPM-UNIFESP-SP; Doctorate in Nefrology, EPM-UNIFESP-SP; Post Doctorate in Nefrology, Renal Division, Emory University, School of Medicine, Atlanta, Georgia, USA; Professora in Nefrology, DMC, CCS, UFPE

Professor:	**Marcello Ramalho de Mello**
Title:	Professor Substituto do Departamento de Medicina Clinica
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Curriculm Vitae Summary:

Degree in Techology Course and Development of Software from Rede Unibratec de Ensino (2004), completing masters in Computer Science from the Federal Univerisity of Pernambuco (UFPE). Current

project manager of the Núcleo de Telesaúde (NUTES) substitute Professor of Health Informatics in the Department of Clinical Medicine at UFPE and member of the Health Informatics Technology group. Has experience in Computer Science, with an emphasis on Software Engineering since 1986, focusing mainly on the following topics: public health and software development.

Professor:	**Rodrigo Cariri Chalegre de Almeida**
Title:	Professor Substituto do Departamento de Medicina Social
Address:	Av. Prof. Moraes Rego, S/n, Cidade Universitária,
Zipcode:	50.670-420
City/State/Country:	Recife/PE/Brasil
Telephone:	+55 81 2126-
Fax:	+55 81 2126-
Email:	(b)(6)

Curriculm Vitae Summary:

Degree in Medicine from the Federal University of Pernambuco (2000) and medical residency from the School of Public Health of Rio Grande do Sul (2003). Current Coordinator of Medical Residency in MFC at the Federal University of Pernambuco and Family Physician of the Mayor of the City of Recife. Has experience in Medicine, with an emphasis in Public Health. focusing mainly on the following topics: Family and Community Medicine, Popular Education and Health, Health Center School Murialdo, Morro da Cruz, Campo da Tuca.

Courses at UTH

HI 5000	Technical Writing for Health Informatics	basic	3
HI 5001	Special Topics in Health Informatics	basic	3
HI 5001	Special Topics: Introduction to Health Data and Electronic Health Records	basic	3
HI 5001	Special Topics: Scientific Visualization	basic	3
HI 5001	Molecules to Man in Health Informatics	basic	3
HI 5001	Emerging Technologies for Teaching, Learning and Research	basic	3
HI 5001	Mathematical Methods for Health Informatics	basic	3
HI 5001	Principles of Public Health Informatics	basic	3
HI 5001	Applied Mathematics in Biomedicine	basic	3
HI 5001	Health Information Technology and Imaging Standards	basic	3
HI 5001	Numerical Methods for Health Information Sciences, Biomedical Science and Engineering	basic	3
HI 5001	Mathematical Modeling of Biological Systems and Disease	basic	3
HI 5001	Special Topics: Data Structures and Algorithms	basic	3
HI 5001	Special Topics: Deterministic Modeling of Biological Systems	basic	3
HI 5002	Directed Study in Health Informatics	basic	3
HI 5300	Introduction to Health Informatics	basic	3
HI 5301	Information Systems in the Delivery of Health Care	basic	3
HI 5302	Cognitive Science in Health Informatics	basic	3
HI 5303	Decision Making in Health Care	basic	3
HI 5304	Advanced Database Concepts	basic	3
HI 5305	Legal and Ethical Aspects in Health Informatics	basic	3
HI 5306	Health Information Systems Security	basic	3

HI 5307	Systems Analysis for Health Informatics	basic	3
HI 5308	Introduction to Object-Oriented Systems Development in Health Informatics	basic	3
HI 5309	Introduction to Clinical Healthcare	basic	3
HI 5310	Foundations of Health Information Sciences I	basic	3
HI 5311	Foundations of Health Information Sciences II	basic	3
HI 5312	Information Technology for Biomedicine	basic	3
HI 5313	Foundations of Health Information Sciences II	basic	3
HI 5321	Biomedical Signal Processing	basic	3
HI 5323	Image Processing	basic	3
HI 5340	Introduction to Learning Environments in Health Sciences	basic	3
HI 5341	Learning Development in the Health Sciences	research	3
HI 5350	Evaluation of Health Care Systems	research	3
HI 5351	Research Design and Evaluation in Health Informatics	research	3
HI 5352	Statistical Methods in Health Informatics	research	3
HI 5353	Health Informatics Data Analysis	research	3
HI 5354	Cognitive Engineering in Health Informatics I	research	3
HI 5370	Methods in Computational Biomedicine	research	3
HI 6000	Practicum in Health Informatics	other	3
HI 6001	Special Topics in Health Informatics	advanced	1-9
HI 6001	Special Topics: Educational Research Design in the Health Sciences	research	3
HI 6001	Special Topics: Nanomedicine in Healthcare	basic	3
HI 6001	Special Topics: Clinical Datamining	advanced	3
HI	Outcomes and Quality in Healthcare	advanced	3

6001		
HI 6001	Nonlinear Dynamic Systems	advanced 3
HI 6001	Special Topics: Reasoning and Decision Making	advanced 3
HI 6001	Applied Clinical Decision Support	advanced 3
HI 6002	Directed Study in Health Informatics	advanced 1-9
HI 6300	Advanced Health Information Systems	advanced 3
HI 6301	Health Data Display	advanced 3
HI 6302	Knowledge Modeling and Engineering in Health Informatics I	advanced 3
HI 6303	Introduction to Telehealth	advanced 3
HI 6304	Consultation in Health Informatics	advanced 3
HI 6305	Social Dynamics and Health Information	advanced 3
HI 6306	Comparative Taxonomy	advanced 3
HI 6307	Cognitive Engineering in Health Informatics II	advanced 3
HI 6308	Consumer Informatics	advanced 3
HI 6309	Healthcare Interface Design	advanced 3
HI 6310	Knowledge Modeling II	advanced 3
HI 6311	Advanced Decision Analysis I	advanced 3
HI 6312	Project Management in Healthcare	advanced 3
HI 6313	Scientific Writing in Healthcare	advanced 3
HI 6320	Introduction to Computational Aspects of Bioinformatics	advanced 3
HI 6321	Applied Computational Biomedicine	advanced 3
HI 6322	Advanced Topics in Computational Biomedicine	advanced 3
HI 6323	Datamining in Bioinformatics	advanced 3

HI 6324	Cognitive Computational Neuroscience	advanced	3
HI 6326	Computational Structural Biology	advanced	3
HI 6327	Biomolecular Modeling	advanced	3
HI 6351	Knowledge Acquisition	research	3
HI 7000	Advanced Preceptorship	other	1-9
HI 7050	Research in Health Informatics	other	1-21
HI 7100	Career Development in Health Informatics	other	1
HI 7150	Research Seminar	other	1
HI 7200	Supervised Research	other	2
HI 7301	Grant Writing	research	3
HI 9999	Dissertation in Health Informatics	other	1-9

Course Listings at Duke University

Note: Course numbers 200 and greater are graduate courses.

COMPSCI 82-01	TECH/SOC ANALY INFO & INTERNET	Astrachan,Owen L
COMPSCI 100-001	PROGRAM DESIGN/ANALY II	Astrachan,Owen L
COMPSCI 100-01R	PROGRAM DESIGN/ANALY II	Astrachan,Owen L
COMPSCI 100E-001	PROGRAM DESIGN/ANALY II	Astrachan,Owen L
COMPSCI 100E-01L	PROGRAM DESIGN/ANALY II	Astrachan,Owen L
COMPSCI 100E-02L	PROGRAM DESIGN/ANALY II	Astrachan,Owen L
COMPSCI 216-01	ADVANCED DATABASE SYSTEMS	Babu,Shivnath
COMPSCI 220-01	ADV COMPUTER ARCHITEC I	Lebeck,Alvin

COMPSCI 225-01	FAULT-TOLERANT/COMP SYS	Sorin,Daniel J
COMPSCI 274-01	COMPUTER VISION	Tomasi,Carlo
ECE 195-06	DATA VISUALIZATION	Brady,Rachael
COMPSCI 1-001	PRINCIPLES OF COMP SCIENCE	
COMPSCI 1-01L	PRINCIPLES OF COMP SCIENCE	
COMPSCI 1-02L	PRINCIPLES OF COMP SCIENCE	
COMPSCI 1-03L	PRINCIPLES OF COMP SCIENCE	
COMPSCI 1-04L	PRINCIPLES OF COMP SCIENCE	
COMPSCI 4-01	PROGRAMMING/PROBLEM SOLVING	
COMPSCI 49S-01	GOOGLE:THE COMPUTER SCI WITHIN	
COMPSCI 82S-01	TECH/SOC ANALY INFO & INTERNET	
COMPSCI 82S-02	TECH/SOC ANALY INFO & INTERNET	
COMPSCI 100-001	PROGRAM DESIGN/ANALY II	
COMPSCI 100-01R	PROGRAM DESIGN/ANALY II	
COMPSCI 100-02R	PROGRAM DESIGN/ANALY II	
COMPSCI 100E-001	PROGRAM DESIGN/ANALY II	
COMPSCI 100E-01L	PROGRAM DESIGN/ANALY II	
COMPSCI 100E-02L	PROGRAM DESIGN/ANALY II	
COMPSCI 110-001	INTRO TO OPERATING SYSTM	
COMPSCI 110-01R	INTRO TO OPERATING SYSTM	
COMPSCI 110-02R	INTRO TO OPERATING SYSTM	

COMPSCI 111-01	INTRO TO COMPU MODELING
COMPSCI 124-01	COMPUTER GRAPHICS
COMPSCI 160-01	INTRO COMPUTATIONAL GENOMICS
COMPSCI 182S-01	TECHNICAL/SOCIAL ANALY INFOR
COMPSCI 221-01	ADV COMPUTER ARCHITEC II
COMPSCI 237-01	RANDOMIZED ALGORITHMS
COMPSCI 261-01	COMP BIO GENE REGULATION
COMPSCI 296-01	DATABASES
COMPSCI 296-02	LINEAR AND INTEGER PROGRAMMING
COMPSCI 296-03	STRUCTURAL MOLECULAR BIOLOGY
COMPSCI 296-04	ADVANCED TOPICS IN CPS

Course Listings at University of Sao Paulo

Undergraduate courses:

MPT0164 – Métodos Quantitativos em Medicina (*Quantitative Methods in Medicine*)

MPT1445 – Telemedicina (*Telemedicine*)

MPT1228 - Informática em Saúde (*Informatics in Health*)

MAC0426 – Sistemas de Banco de Dados (*Database Systems*)

MAE0523 – Elementos da Teoria das Decisões (*Elements of Decision Theory*)

Graduate courses:

MPT 5761 – Informática Médica I (*Medical Informatics I*)

MPT5762 – Sistemas Dinâmicos não Lineares em Biologia e Fisiologia (*Non Linear Dynamic Systems in Biology and Physiology*)

MPT5740 - Telemedicina I (*Telemedicine I*)

MPT5764 – Sistemas de Informação em Saúde (*Information Systems in Health*)

MPT5769 – Teoria de Conjuntos Fuzzy em Biomedicina (*Fuzzy Sets Theory in Biomedicine*)

MPT5763 – Métodos Computacionais de Apoio ao Diagnóstico e Terapêutica (*Computational Methods of Support to Diagnosis and Therapeutics*)

MPT5765 – Avaliação em Informática Médica (*Evaluation in Medical Informatics*)

MPT5772 – Introdução à Bioinformática (*Introduction to Bioinformatics*)

MPS5766 – Estatística em Psiquiatria I (*Statistics in Psychiatry*)

MPR5740 – Análise Quantitativa em Saúde (*Qualitative Analysis in Health*)

MPR5729 – Análise de Estudos Epidemiológicos I (*Analysis of Epidemiological Studies I*)

MUR5721 – Estatística Médica (*Medical Statistics*)

MCM5880 – Bioestatística Aplicada a Clínica Médica (*Biostatistics Applied to Medical Clinics*)

MAC5918 – Processamento e Análise de Imagens Médicas (*Processing and Analysis of Medical Images*)

MAE5755 – Métodos Estatísticos Aplicados às Ciências Biológicas (*Statistical Methods Applied to Biological Sciencies*)

MAE5783 – Análise de Sobrevivência (*Survival Analysis*)

Pós-Graduação

Código da Disciplina	Carga Horária	Semestre	Créditos	Título / ementa
MI905	60h		4	Bioestatística (Obrigatória)
MI933	60h		4	Didática do Ensino Superior (Obrigatória)
MI936	60h		4	Seminários de Pesquisa (Obrigatória)
MI939	60h		4	Planejamento e Análise de Estudos Epidemiológicos (Obrigatória)
MI 902	45h		3	Metodologia Científica (Eletiva)
MI 926	60h		4	Imunologia Médica (Eletiva)
MI 930	60h		4	Bioética (Eletiva)
MI 934	60h		4	Informática em Saúde I (Eletiva)

Graduação

Código da Disciplina	Carga Horária	Semestre	Créditos	Título e ementa
MPT0164	**60h**		**4**	**Métodos Quantitativos em Medicina**

Ementa: 1. Métodos Quantitativos: conceitos iniciais;
2. Probabilidade: conceitos e leis; 3. Distribuições estatísticas; 4. Inferência e Raciocínio Médico; 5. Teste z; 6. Teste t; 7. Análise de Variância; 8. Bioestatística não Paramétrica; 9. Correlação e regressão; 10. Qui Quadrado; 11. Teorema de Bayes em Medicina: definição e aplicações; 12. Matemática das Populações; 13. Herança: Introdução à Genética Quantitativa; 14.Teoria da Evolução Darwiniana em Medicina.

MPT1445	**90h**		**2**	**Telemedicina**

Ementa: Os alunos deverão ser capazes de expor os princípios e estruturas da Internet, explicar a importância e o alcance da tele-informática como instumento de educação médica e expor os aspectos éticos da informação médica na Internet. Os alunos serão habilitados a: 1) preparar uma aula ou um caso clínico para sua disponibilização na Internet e/ou Intranet; 2) elaboar um tema informatizado para auto- avaliação de estudantes de graduação (e mesmo de pós-graduação sensu latu); 3) estruturar dados clínicos para fins de intercâmbio na Internet; 4) viabilizar a captação de protocolos de levantamentos de dados médicos (ou outros) via Internet.

MPT1228	**75h**		**3**	**Informática em Saúde**

Ementa: Capacitar estudantes da área para a organização, processamneto, veiculação, e recuperação de dados e de informação médica, a partir de aplicativos próprios para o cumprimento destas finalidades ou pelo desenvolMemtno de novos instrumentos computacionais. Apresentar o campo do conhecimento da Infromática Médica e sua diferentes sub-áreas, a partir de aulas teóricas e discussões de artigos recentes da literatura na área. Elaborar junto com os alunos estratégias de análise de dados de pesquisa, oriundos das necessidades dos próprios alunos, a partir das aplicações em aulas práticas dos conceitos discutidos em aulas teóricas e seminários.

MAC0426	**60h**		**4**	**Sistemas de Bancos de Dados**

Oferecida pelo Instituto de Matemática e Estatística da USP

Ementa: Introdução: arquitetura de bancos de dados. Modelagem de dados: projeto conceitual, lógico e físico de bancos de dados. Modelos conceituais: modelo ER básico e estendido. Projeto de bancos de dados utilizando o modelo ER estendido. Mapeamento do modelo ER estendido para relacional. Modelo relacional: definições e formalização. Linguagens do modelo relacional: álgebra relacional, cálculo relacional e SQL. Dependências funcionais e normalização de relações. Índices hashing e árvores B, B+. Noções de controle de concorrência e de algoritmos de recuperação a falhas. Noções de otimização de consultas relacionais.

MAE0523	**60h**		**4**	**Elementos da Teoria das Decisões**

Oferecida pelo Instituto de Matemática e Estatística da USP

Ementa: Introduzir o cenário de teorias de estatística. Jogo. Utilidade. Princípio minimax e soluções de Bayes. Admissibilidade. Funções de decisão e risco. Teste e estimação.

A seguir é apresentado um quadro com as disciplinas da pós-graduação que abordam temas da informática médica oferecidas pela FMUSP.

Pós-Graduação

Código da Disciplina	Carga Horária	Semestre	Créditos	Título e ementa

MPT5761	**120h**	**8**	**Informática Médica I**

Ementa: 1. Tópicos em Informática Médica 1.1 - Terminologia 1.2 - Dados Médicos (Aquisição, Arquivamento e Recuperação) 1.3 - Construção da Decisão em Medicina 1.4 - Conceitos Essenciais em Computação Médica 1.5 - Desenho de um Sistema e sua Avaliação 1.6 - Padronização e Nomenclatura 1.7 - Telemedicina 2. Aplicações de Computação em Medicina 2.1 - Sistemas de Arquivo Médico 2.2 - Sistemas de Informação Hospitalar 2.3 - Sistemas de Informação em Saúde Pública 2.4 - Sistemas Bibliográficos 2.5 - Sistemas de Educação Médica 3. Temas Avançados em Informática Médica 3.1 - Inteligência Artificial 3.2 - Processamento de Sinais Biológicos 3.3 - Processamento de Imagens 3.4 - Modelagem matemática e aplicações em saúde.

MPT5762	**120h**	**8**	**Sistemas Dinâmicos não Lineares em Biologia e Fisiologia**

Ementa: 1 Equações de diferenças finitas (equações lineares de diferenças finitas: métodos de interação: equações de diferenças lineares: ciclos e estabilidade: caos: quasiperiodicidade). 2 Autosimilaridade e Geometria Fractal (fractais: dimensão: algoritmos de contagem de caixa). 3 Estatística e Autosimilaridade (dinâmicas fractais: random walks: distâncias estatísticas). 4 Equações Diferenciais Unidimensionais (estabilidade: pontos fixos: análise geométrica de equações não lineares: equações diferenciais versus equações de diferenças finitas: equações diferenciais unidimensionais no retardo). 5 Equações Diferenciais Bidimensionais (oscilador harmônico: soluções e trajetória: equações diferenciais bidimensionais não lineares: sistemas de equações lineares acopladas: espaço de fase: estabilidade local de equações diferenciais bidimensionais: ciclos limite: seções de Pincaré). 6 Análise de Séries Temporais (medidas, amostragem de ruído: média de desvio padrão: correlações lineares: análise espectral: análise de dados de sistemas não lineares: caracterização de caos: detecção de caos e não linearidades).

MPT5740	**120h**	**8**	**Telemedicina I**

Ementa: Aulas Teóricas - Temas a abordar: "Telemedicina: princípios e tecnologias"; "Internet e Medicina: Presente e Futuro"; "Internet e Educação Médica". "Segurança da Informação eletrônica", "Gestão da Informação Médica", "Medicina Baseada em Evidência e teleassistência", "Iconografias educacionais dinâmicas" e "Ética de Informação Médica na Internet". Aulas Práticas - serão ministradas: A) Treinamento no uso de lista de discussão para organizar fóruns de debates: B) Treinamento no uso do Cyberambulatório para implementação do Aprendizado Baseado em Problema e promoção de Interconsulta através da Internet; C) Treinamento em máquina fotográfica e filmadora digital como recurso para documentação clínica; D) Noções básicas para tratamento de fotos e imagens digitais; E) Treinamento em pesquisa de literatura científica através da Internet; F) Demonstração prática do uso de videoconferência; G) Familiarização no uso do Cybertutor para estruturação de um curso interativo baseada na Internet; H) Realização de Mídia Training. Programas a serem desenvolvidos pelos alunos em horas de estudos: 1) Aula ou caso clínico, com objetivos bem definidos, disponibilizado na Internet ou Intranet; 2) Auto-avaliação interativa baseada no tema anterior, com testes de múltipla escolha, respostas e referências; 3) Padronização e criação de formulários para envio de casos clínicos pela Internet; 4) Estudo de como desenvolver protocolos científicos baseados na Internet.

MPT5764	**90h**	**6**	**Sistemas de Informação em Saúde**

Ementa: Parte I - Nomenclaturas, Classificações e Codificação da Informação em Saúde 1. Introdução 2. Classificações 2.1 Princípios de Ordenação 2.2 Nomenclaturas e Thesaurus 2.3 Códigos 2.4 Taxonomias 2.5 Nosologias 3. História das Classificações em Medicina 4. Problemas de Classificação e Codificação 5. Sistemas de Classificação 5.1 CID - Classificação Internacional de Doenças da OMS 5.2 AMB - Tabela de Procedimentos da Associação Mkédica Brasileira 5.3 SUS - Tabela de Procedimentos do SUS 5.4 ATC - Classificação de Medicamentos Anatômico-Terapêutico-Químico 5.5 CPT - Current Procedures Terminology da AMA 5.6 SNOMED - Nomenclatura Sistematizada de Medicina do Colégio Americano 5.7 MeSH - Medial Subject Headings da Biblioteca Nacional de Medicina Americana 5.8 DRG - Diagnosis Related Groups 5.9 UMLS - Sistema de Linguagem Médica Unificada 6. DesenvoMmentos Atuais Parte II - O Prontuário dos Pacientes 1. Introdução 2. História dos Prontuários dos Pacientes 3. O Prontuário Atualmente 4. Modelos de Prontuário de Papel 5. Aspectos Clínicos, Administrativos, Gerenciais e Ético-Legais dos Prontuários 6. O Prontuário de Pacientes Baseado em Computadores (CBPR) 7. Entrada de Dados 7.1 Processamento de Linguagem Natural 7.2 Entrada de Dados Estruturados 7.3 Formas de Entrada de Dados 7.4 SDE Dinâmica 7.5 Interfaces para SDE 8. Codificação e Padronização 8.1 Troca de Dados de Pacientes e Dados Codificados 8.2 Dados Não-Textuais 9. Representação Cronológica 10. Uso Clínico do CBPR Parte III - Sistemas de Informação Hospitalar / Sistemas de Informação em Saúde 1. Introdução 2. O Desenvolvimento Histórico de Sistemas de Informação Hospitalar 3. Sistemas de Informação 3.1 O Registro dos Pacientes 3.2 Internação, Transferência e Alta 3.3

MPT5769	**90h**	**6**	**Teoria de Conjuntos Fuzzy em Biomedicina**

Ementa: Lógica fuzzy, teoria de conjuntos fuzzy, operações com conjuntos fuzzy, aritmética fuzzy, variáveis lingüísticas,

medidas subjetivas, teoria de possibilidades, relações fuzzy, modelos lingüísticos, aplicações em biomedicina, tópicos avançados, desenvolvimento de aplicações fuzzy com o matlab/toobox fuzzy.

MPT5763	**90h**	**6**	**Métodos Computacionais de Apoio ao Diagnóstico e Terapêutica**

Ementa: Parte I - Métodos de Apoio à Decisão 1. Bancos de Dados e Bases de Informações em Saúde 2. Métodos de Apoio à Decisão 3. Formas de Conhecimento Médico 4. Modelos de Apoio à Decisão 4.1 Métodos quantitativos de apoio à decisão 4.1.1 Uma característica: limiar único de decisão 4.1.2 Receiver operarting characteristics 4.1.3 Desempenho dos modelos de decisão 4.1.4 Custo e riscos 4.1.5 Teorema de Bayes 4.1.6 Múltiplas características 4.2 Métodos qualitativos de Apoio à Decisão 4.2.1 Tabelas de decisão 4.2.2 Árvores de decisão 4.2.3 Fluxogramas 4.2.4 Raciocínio baseado em regras 4.2.5 Lógica booleana. Cálculo dos Predicados 4.2.6 Outros elementos de raciocínio simbólico 4.2.7 Estruturação de conhecimento 4.2.8 Sistemas baseados em conhecimento 5. Aspectos ético-legais de sistemas de decisão computadorizados Parte II - Sistemas Clínicos de Apoio à Decisão 1. Introdução 1.1 História dos Sistemas Clínicos de Apoio à Decisão 1.2 Tipos de Sistemas 2. Definição de Sistemas de Apoio à Decisão 3. Influência de Sistemas de Apoio à Decisão 4. Categorias de Sistemas 6. Tendências Atuais Parte III - Estratégias para Aquisição de Conhecimento 1. Fontes de Conhecimento Médico 2. Necessidade de Informação e Solução de Problemas 3. Categorias de Sistemas de Apoio à Decisão e Bases de Conhecimento 3.1 Tipos de Sistema de Apoio à Decisão 3.2 Qualidade dos Dados em Bases de Conhecimento 3.2.1 Repositórios de Dados de Pacientes 3.2.2 Estatísticas para Sistemas Bayesianos 3.2.3 Treinamento de Redes Neurais Artificiais 3.2.4 Manutenção de Bases de Conhecimento 4. Bases de Conhecimento e Aquisição de Conhecimento Médico 4.1 Protocolos Clínicos Informatizados 4.2 Meta Análise 4.3 Qualidade das Fontes de Conhecimento 4.4 Instrumentos para Aquisição de Conhecimento 5. Tendências em Aquisição de Conhecimento 5.1 Reprodutividade 5.2 Fontes Textuais 5.3 Periódicos Científicos Eletrônicos 5.4 Análise de Texto Livre (Linguagem Natural) 5.5 Lógica de Busca e Recuperação Bibliográfica 5.6 Manutenção de Bases de Conhecimento 6. Distribuição e Uso de Bases de Conhecimento para uso Clínico 7. Avaliação de Bases de Conhecimento Parte IV - Instrumentos Preditivos para Apoio à Decisão Clínica 1. Desenvolvimento de Ferramentas Preditivas 2. Apoio à Decisão com Ferramentas Preditivas Simples 2.1 Regras de Predição baseadas em Análise Estatística 2.2 Estimação de Coeficientes de Regressão 2.3 Avaliação de Desempenho do Modelo 2.4 Apresentação do Modelo de Resultados 2.5 Instrumentos baseados em Análise de Decisão

MPT5765	**90h**	**6**	**Avaliação em Informática Médica**

Ementa: I- avaliação em informática médica: definições, conceitos e importância 2- métodos e instrumentos de avaliacão 3-seleção de métodos 4- coletando dados, interpretando resultados

MPT5772	**45h**	**3**	**Introdução à Bioinformática**

Ementa: I - Introdução à Biologia Molecular Célula, molécula, gene, cromossomo, DNA, RNA, proteína, conexão DNA-RNA-proteína, estruturas de proteínas, funções de proteínas, propriedades bioquímicas dos aminoácidos, motifs, domínios, famílias de proteínas, evolução, similaridade, homologia. II - Seqüenciamento e montagem de DNA Metodologia básica das reações de seqüenciamento, estratégias de seqüenciamento de genoma, estratégias para seqüenciamento em larga escala (mapeamentos, clonagem, EST's), cromatogramas, análise da qualidade das seqüencias obtidas, processamento de seqüências (repetições, vetores quimeras e outros contaminantes), formatos de apresentação das seqüências, algoritmos de alinhamento local de seqüencias e técnicas de montagem de fragmentos de DNA. III - Análise das seqüências genômicas Identificação de genes, localização de genes e predição de ORFs, anotação e categorização de genes, comparação de genomas. IV - Análise das seqüências de aminoácidos Algoritmos de alinhamento local e global de pares de seqüências, matrizes de scores, buscas de similaridade e homologia em bancos de dados de proteínas, alinhamento de múltiplas seqüências, alinhamento de múltiplas seqüências com Modelos de Markov Escondidos (HMM), identificação de motifs e domínios em seqüências de aminoácidos, famílias de proteínas, análise e predição de estrutura e função de proteínas.

MPS5766	**60**	**4**	**Estatística em Psiquiatria I**

Ementa: Aulas teóricas: 1. Casos e variáveis. Métodos e instrumentos de mensuração em Psiquiatria. 2. Média, variância, desvio padrão e escores "Z". 3. Correlação e predição. 4. Curva normal, probabilidade, população, amostra. 5. Testagem de hipóteses. 6. Testagem de hipóteses com médias de amostras. Seminários/práticas: 1. Poder estatístico e tamanho do efeito. 2. Teste "t". 3. Teste "t" para médias independentes. 4. Análise de variância. 5. Estatística não paramétrica. 6. Uso da estatística em artigos de pesquisa.

MPR5740	**60h**	**4**	**Análise Quantitativa em Saúde**

Ementa: 1. Tipos de dados e distribuições de probalidade 2. Apresentação tabular e gráfica. 3. Variabilidade amostral de proporções e comparação de duas proporções 4. Variabilidade amostral de médias e comparação de duas ou mais médias 5. Associações entre variáveis categóricas 6. Tamanho amostral e poder 7. Associações entre variáveis quantitativas 8. Correlação e regressão linear

MPR5729	**120h**	**8**	**Análise de Estudos Epidemiológicos I**

Ementa: O curso será constituído por aulas teóricas e aulas práticas, com a utilização de computadores e do programa estatístico STATA 7.0. Serão discutidas as formas de análise univariada para cada tipo de estudo, o controle de confusão e a avaliação de interação através da análise estratificada, bem como uma introdução ao uso da regressão logística. Os principais tópicos do curso são: Medidas de doença e de associação; Estimativa por intervalo; Análise de estudos Caso-Controle; Análise de estudos de Coorte; Comparação de coorte com grupo de referência externo (SMR); Verossimilhança; Regressão Logística.

MUR5721	**45h**	**3**	**Estatística Médica**

Ementa: Aulas teóricas: 1. Características de estudos clínicos - Estudos caso-controle: - Estudos longitudinais; - Ensaios clínicos controlados; 2. Definição da metodologia em pesquisa clínica - Critérios de inclusão/ exclusão: - Definição do tamanho da amostra (com previsão de perdas); - Aleatorização e princípios da intenção de tratamento; - Apresentação de resultados. 3. Distribuição amostral e Testes de hipóteses - Métodos paramétricos e não paramétricos: - Análise de variância de um fator; - Análise de variância com dois fatores. 4. Estudo da associação entre variáveis - Associação entre variáveis quantitativas; - Associação entre variáveis qualitativas. 5. Análise de sobrevivência e de eventos não mórbidos - Cálculo da sobrevivência (Kaplan-Meyer); - Cálculo da incidência real do evento. 6. Análise de fatores relacionados ao risco de mortalidade e de complicações - Análise unifatorial de risco: - Análise de regressão linear múltipla; - Análise de regressão logística: - Modelos de risco proporcional de Cox. 7. Conceito e interpretação dos resultados de meta-análises Prática: exercícios e programas pessoais de treinamento, encaminhados por e-mail aos alunos e avaliados periodicamente. Estudos: literatura recomendada aos alunos durante o curso

MCM5880	**60h**	**4**	**Bioestatística Aplicada a Clínica Médica**

Ementa: (1) Teoria do conhecimento científico (2) Medidas como predicado das coisas: variáveis, bases de dados (3) Padrões de comportamento de medidas: distribuições, probabilidade, inferência (4) Comparações de conjuntos de coisas segundo seus atributos: fenômenos quantitativos – juízos de igualdade e diferença na distribuição normal e T (5) Comparações conjuntos de coisas segundo seus atributos: fenômenos qualitativos – juízos de igualdade e diferença na distribuição binomial e generalização para normal (6) Associação entre fenômenos qualitativos – análise de tabela de contingência, qui-quadrado e análise de resíduos (7) Associação entre fenômenos quantitativos – análise de planos de dispersão, correlação e regressão linear (8) Relações em espaço multidimensional – estratificação de efeitos, regressão logística (9) Estratégias alternativas para análise de dados – técnicas de análise multivariada, modelos lógicos e matemáticos

MAC5918	**120h**	**8**	**Métodos Estatísticos Aplicados às Ciências Biológicas**

Ementa: 1. Revisão das noções de estimação e testes de hipótese. 2. Inferência estatística não-paramétrica. O teste do sinal e o teste dos postos de Wilcoxon. 3. Análise de Variância a um critério, modelo fixo. Comparacões Múltiplas. 4. Planejamento e análise de experimentos com um e dois fatores. Interação. 5. Regressão com uma variável. Os principais testes de hipóteses sobre os parâmetros da Regressão. Correlação e medidas de associação entre variáveis aleatórias. 6. Tópico Livre (a ser escolhido de acordo com os interesses específicos dos alunos do curso)

MAE5783	**120h**	**8**	**Análise de Sobrevivência**

Ementa: 1. Introdução a conceitos básicos: caracterização de tempos de falhas (função de risco, sobrevivência, equivalências); censuras e truncagem: tipos de censura. 2. Conceitos básicos de processos estocásticos de contagem sob o enfoque de análise de sobrevivência (filtragem, propriedade martingal, etc).Resultados utilizados no estudo de propriedades de estimadores e estatísticas de teste. 3. Modelos paramétricos e estimação de máxima verossimilhança para amostras censuradas: desenvolvimento de propriedades assintóticas para o caso de uma amostra. Estimação paramétrica da função de sobrevivência e outras quantidades de interesse. 4. Estimação não-paramétrica da função de sobrevivência e da função de risco acumulada: estimador de Kaplan-Meier e suas propriedades assintóticas. 5. Testes não-paramétricos para uma ou mais amostras na presença de observações censuradas. O teste de logrank ponderado e a classe de estatísticas lineares de postos. 6. Utilização de covariáveis: modelos paramétricos de regressão; tempos de vida acelerados e modelo paramétrico de riscos proporcionais. 7. Modelo semiparamétrico de riscos proporcionais de Cox: Modelo de Cox estendido. Estimação e testes envolvendo covariáveis; teoria assintótica.

8. Alguns modelos multivariados: modelos de riscos competitivos, estimação da função de sobrevivência bivariada.

Budget Narrative

Budget Narrative

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USA-Brazil Consortium for Education in Biomedical Informatics
Budget Narrative
Year 1

For both Duke and UTH, domestic travel within USA will be funded by non-consortium sources.

University of Texas, Houston, School of Health Information Sciences

Professors M Sriram Iyengar (UTH Project Director for the Consortium), Todd Johnson (Associate Dean for Academic Affairs), and Jack W. Smith (Dean of the School) will each contribute (b) FTE to Consortium activities. The total salary and fringes, amounting to (b)(4) s not applied to the budget in any of the project's years as this effort runs concurrently with academic commitment to the institution which in turn provides support to this program.

Activities will include tele/web conferencing with other consortium members, starting to create the Cross-Institutional Curriculum Map, setting up procedures for degree recognition, curriculum recognition, fees and the other details needed to set up the next three years.

Professors Johnson will make one trip and Professors Iyengar and Smith will make two trips each to Brazil, to meet high ranking administrators and Consortium faculty at University of Sao Paulo and the Federal University of Pernambuco. The total cost of this travel is expected to be $8750.00.

The evaluation consultant, Mr Sunand Bhattacharya, will be paid (b)(6) to set up the initial formative evaluation, including identification of important subjective and objective criteria and data collection procedures.

Professor Iyengar will manage setting up the Consortium collaboration web site in association with Mariana Macready and Julie Simkins (Duke University).

Three students will be recruited and enroll in Portuguese language classes given by a professional instructor in the Houston area. Total cost is $3000.

The University of Texas Health Science Center has applied an 8% indirect cost rate as directed in the solicitation guidelines.

Duke University

Professor Pietrobon will devote 1.3% FTE for coordinating between Duke, UT Houston, USP and UFPE. He will be responsible for curricular and student mobility aspects from the Duke University side. He will travel to Brazil once during Year 1.

Mariana Macready (b)(4) FTE) will assist Prof. Iyengar and work with Julie Simkins to develop the consortium web site and instruct students and faculty on its use. She will be responsible for management of the web site and database, monitoring the contents and report generation. She will accompany faculty from UTH to Brazil on one trip in order to assist with language and culture since she is fluent in Portuguese and has lived in Brazil.

Julie Simkins ((b)(4) FTE) will assist Prof. Iyengar and work Mariana Macready to develop the consortium web site and instruct students and faculty on its use. She will also perform liaison with Brazilian consortium members. She will accompany faculty from UTH to Brazil on one trip in order to assist with language and culture since she is fluent in Portuguese and has lived in Brazil.

The total salary costs for Duke consortium personnel is (b)(2) in Year 1.

Three Duke University students will be recruited and enrolled in Portuguese language classes at Duke. The total cost for this is $2052.00

Travel costs for Duke University faculty/staff will be obtained from other sources. Duke contractual costs are $1,111.00.

Year 2

For both Duke and UTH, domestic travel within USA will be funded by non-consortium sources.

University of Texas, Houston, School of Health Information Sciences

Professors M Sriram Iyengar (UTH Project Director for the Consortium), Todd Johnson (Associate Dean for Academic Affairs), and Jack W. Smith (Dean of the School) will each contribute (b FTE to Consortium activities. The total salary and fringes, amounting to (b)(4) are not reflected in this budget.

Professors Smith and Johnson will be responsible for ongoing discussions, identification of internship opportunities, progress reviews, and relationships with high level administrative counterparts at Duke, USP, and UFPE. Professor Iyengar will be responsible for management of consortium activities, he will oversee the web site, assisting Brazilian exchange students, monitoring their progress as well as that of the US students from Texas in Brazil, locating internship opportunities, and coordination with faculty at Duke, USP, and UFPE. Professors Johnson and Iyengar will also begin recruitment of new students for Year 3.

A total of five trips to Brazil will be made by these faculty. The travelers will be identified later depending on the particular needs of the trip and other faculty schedules. Purpose is to meet counterparts in Brazil, monitor and discuss consortium progress, resolve ongoing issues if any. One of these trips will be for three faculty to, in addition to meetings with consortium members, to attend the mandatory FIPSE/CAPES meeting.

Total travel costs will be $8750.00

Evaluation of the 2nd year will be done towards the end of that year, by the evaluation consultant, Mr Sunand Bhattacharya, who will be paid (b)(6) He will review year 2 consortium progress, make recommendations for improvement and set up formative evaluation for Year 3.

Three new students will be recruited and enrolled in Portuguese language classes given by a professional instructor in the Houston area. Total cost is $3000. The three students recruited in the first year will each receive mobility stipends of $4000.

Duke University

Professor Pietrobon will devote (b)(4) FTE for coordinating between Duke, UT Houston, USP and UFPE. He will be responsible for curricular and student mobility aspects from the Duke University side. He will travel to Brazil once during Year 2.

Mariana Macready ((b)(4) FTE) will assist Prof. Iyengar and work with Mariana Macready for continued maintenance and development the consortium web site and instructing students and faculty on its use. She will be responsible for management of the web site and database, monitoring the contents and report generation. She will accompany 3 US students from UTH to Brazil on one trip in order to assist with language and culture since she is fluent in Portuguese and has lived in Brazil.

Julie Simkins ((b)(4) FTE) will assist Prof. Iyengar and work with Mariana Macready for maintenance and new features of the consortium web site and instructing students and faculty on its use. She will also perform liaison with Brazilian consortium members. She will accompany 3 US students from Duke to Brazil on one trip in order assist with language and culture since she is fluent in Portuguese and has lived in Brazil.

The total salary costs for Duke consortium personnel is (b)(4)

Three new Duke university students will be recruited and enrolled in Portuguese

language classes at Duke. The total cost for this is $2052.00. Three Duke students sent to Brazil will receive mobility stipends totaling $11,700.
Travel costs for Duke University faculty/staff will be obtained from other sources. Duke contractual costs are $2,344.00.
The University of Texas Health Science Center has applied an 8% indirect cost rate as directed in the solicitation guidelines.

Year 3

For both Duke and UTH, domestic travel within USA will be funded by non-consortium sources.
University of Texas, Houston, School of Health Information Sciences
Professors M Sriram Iyengar (UTH Project Director for the Consortium), Todd Johnson (Associate Dean for Academic Affairs), and Jack W. Smith (Dean of the School) will each contribute (b) FTE to Consortium activities. The total salary and fringes, amounting to (b)(4). This cost is not reflected in this budget.
Professors Smith and Johnson will be responsible for ongoing discussions, identification of internship opportunities, progress reviews, and relationships with high level administrative counterparts at Duke, USP, and UFPE. Professor Iyengar will be responsible for management of consortium activities, including the web site, assisting Brazilian exchange students, monitoring their progress as well as that of the US students from Texas in Brazil, locating internship opportunities, and coordination with faculty at Duke, USP, and UFPE. Professors Johnson and Iyengar will also begin recruitment of new students for Year 4.
Evaluation of the 3rd year will be done towards the end of that year, by the evaluation consultant, Mr Sunand Bhattacharya, who will be paid (b)(6) He will review year 3 consortium progress, make recommendations for improvement and set up formative evaluation for Year 4.
A total of four trips to Brazil will be made by these faculty. The travelers will be identified later depending on the particular needs of the trip and other faculty schedules. Purpose is to meet counterparts in Brazil, monitor and discuss consortium progress, resolve ongoing issues if any. Total travel costs will be $7000.00
Three new students will be recruited and enrolled in Portuguese language classes given by a professional instructor in the Houston area. Total cost is $3000. The three students recruited in the 2nd year will each receive mobility stipends of $4000.
The University of Texas Health Science Center has applied an 8% indirect cost rate as directed in the solicitation guidelines.
Duke University
Professor Pietrobon will devote (b)(4) FTE for coordinating between Duke, UT Houston, USP and UFPE. He will be responsible for curricular and student mobility aspects from the Duke University side. He will travel to Brazil once during Year 2.
Mariana Macready ((b)(4)) will assist Prof. Iyengar and work with Julie Simkins with continued maintenance and development the consortium web site and instructing students and faculty on its use. She will be responsible for management of the web site and database, monitoring the contents and report generation. She will accompany 3 US students from UTH to Brazil on one trip in order to assist with language and culture since she is fluent in Portuguese and has lived in Brazil.
Julie Simkins ((b)(4) will assist Prof. Iyengar and work with Mariana Macready for maintenance and new features of the consortium web site and instructing students and faculty on

its use. She will also perform liaison with Brazilian consortium members. She will accompany 3 US students from Duke to Brazil on one trip in order assist with language and culture since she is fluent in Portuguese and has lived in Brazil.
The total salary costs for Duke consortium personnel is (b)(4)
Three new Duke university students will be recruited and enrolled in Portuguese language classes at Duke. The total cost for this is $2052.00. Three Duke students sent to Brazil will receive mobility stipends totaling $11,628.
Travel costs for Duke University faculty/staff will be obtained from other sources. Duke contractual costs are $2,344.00.

Year 4

For both Duke and UTH, domestic travel within USA will be funded by non-consortium sources.
University of Texas, Houston, School of Health Information Sciences
Professors M Sriram Iyengar (UTH Project Director for the Consortium), Todd Johnson (Associate Dean for Academic Affairs), and Jack W. Smith (Dean of the School) will each contribute (b FTE to Consortium activities. The total salary and fringes, amounting to (b)(4) not reflected in this budget.
Professors Smith and Johnson will be responsible for ongoing discussions, identification of internship opportunities, progress reviews, and relationships with high level administrative counterparts at Duke, USP, and UFPE. Professor Iyengar will be responsible for management of consortium activities, including the web site, assisting Brazilian exchange students, monitoring their progress as well as that of the US students from Texas in Brazil, locating internship opportunities, and coordination with faculty at Duke, USP, and UFPE.
Final summative of the 4 years will be done towards the end of that year, by the evaluation consultant, Mr Sunand Bhattacharya, who will be paid (b)(6)
A total of five trips to Brazil will be made by these faculty. The travelers will be identified later depending on the particular needs of the trip and other faculty schedules.. Purpose is to meet counterparts in Brazil, monitor and discuss consortium progress, resolve ongoing issues if any and, most importantly identify source of funding for continued sustainability of the Consortium. One of these trips will also be to attend the mandatory FIPSE/CAPES meeting. Total travel costs will be $8750.00
The three students recruited in the 3rd year will each receive mobility stipends of $4000.
The University of Texas Health Science Center has applied an 8% indirect cost rate as directed in the solicitation guidelines.
Duke University
Professor Pietrobon will devote 1% FTE for coordinating between Duke, UT Houston, USP and UFPE. He will be responsible for curricular and student mobility aspects from the Duke University side. He will travel to Brazil once during Year 2.
Mariana Macready ((b)(4) FTE) will assist Prof. Iyengar and work with Julie Simkins with continued maintenance and development the consortium web site and instructing students and faculty on its use. She will be responsible for management of the web site and database, monitoring the contents and report generation. She will accompany 3 US students from UTH to Brazil on one trip in order to assist with language and culture since she is fluent in Portuguese and has lived in Brazil.
Julie Simkins ((b)(4) will assist Prof. Iyengar and work with Mariana Macready for maintenance and new features of the consortium web site and instructing students and faculty on its use. She will also perform liaison with Brazilian consortium members. She will accompany 3

US students from Duke to Brazil on one trip in order assist with language and culture since she is fluent in Portuguese and has lived in Brazil.
The total salary costs for Duke consortium personnel is (b)(4)
Three new Duke university students will be recruited and enrolled in Portuguese language classes at Duke. The total cost for this is $2052.00. Three Duke students sent to Brazil will receive mobility stipends totaling $10455.00
Travel costs for Duke University faculty/staff will be obtained from other sources. Duke contractual costs are $2,344.00.

PR/Award # P116M080023

	A	B	C	D	E	F	G	H	I	P	W	AD	AE
1	PI:	Iyengar				Agency:	FIPSE			Human subjects:	no		
2	Location:	SHIS								Animals:	no		
3	Project Title	USA Brazil Consortium for Education in Biomedical Informatics				Rate of Increase		3%		Project period:	09/01/08-08/31/12		
4	CFDA	84.116											
5	Deadline	4/17/2008											
6	***Key Personnel***												
7	Salary	Role	N	FTE	Cal. Mos.	Yr 1Salary Request	Fringe Rate	Yr 1Fringe Benefit Request	Total Yr. 1	Total Yr 2	Total Yr 3	Total Yr 4	Project Total
8	$93,200.00	PI	Iy	5.0%	0.60	$4,660.00	23.0%	$1,072.00	0.00	$0.00	$0.00	$0.00	
9	$170,066.00	co-I	S	5.0%	0.60	$8,503.00	19.0%	$1,616.00	0.00	$0.00	$0.00	$0.00	
10	$98,732.00	co-I	Jo	5.0%	0.60	$4,937.00	23.0%	$1,136.00	0.00	$0.00	$0.00	$0.00	
11	$124,218.00	PI Duke	Pi	1.3%	0.16	$1,658.00	20.9%	$347.00	2,005.00	$2,614.00	$2,653.00	$1,641.00	
12	$49,629.00	Software specialist	M	8.3%	1.00	$4,119.00	20.9%	$861.00	4,980.00	$6,983.00	$7,003.00	$8,962.00	
13	$0.00	Web specialist	M		0.00	$0.00	20.9%	$0.00	0.00	$0.00	$0.00	$0.00	
14	$40,571.00	Clinical Data	Si	10.2%		$4,138.00	20.9%	$865.00	5,003.00	$6,982.00	$6,983.00	$9,020.00	
15						$9,915.00		$2,073.00	11988	16579	16639	19623	
16		Subtotals											
17													
18	Salary								9,915.00	$13,713.00	$13,762.00	$16,231.00	$53,621.00
19	Fringe								$2,073.00	$2,866.00	$2,877.00	$3,392.00	$11,208.00
20	Consultant		Ev		consultant				$2,000.00	$2,000.00	$2,000.00	$2,000.00	$8,000.00
21	Equipment								$0.00	$0.00	$0.00	$0.00	$0.00
22	Supplies								$0.00	$0.00	$0.00	$0.00	$0.00
23	Travel		Fa			Smith, Johnson) (Iyengar, Smith)			$8,750.00	$8,750.00	$7,000.00	$8,750.00	$33,250.00
24	Total Direct Costs								$22,738.00	$27,329.00	$25,639.00	$30,373.00	$106,079.00
25	IDC	8%							$1,819.00	$2,186.00	$2,051.00	$2,430.00	$8,486.00
26	Other		La						$5,052.00	$5,052.00	$5,052.00	$0.00	$15,156.00
27	Other		Mobility Stipends						$0.00	$23,700.00	$23,628.00	$22,455.00	$69,783.00
28			Subtotal Stipends						$5,052.00	$28,752.00	$28,680.00	$22,455.00	$84,939.00
29	Total Request								$29,609.00	$58,267.00	$56,370.00	$55,258.00	$199,504.00

(b)(4)

(b)(6)

4/17/20082:16 PM