

ERIK S. MITTRA, M.D., Ph.D.

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Education

- 2008-2009 Stanford University Hospital & Clinics
• Fellow, Division of Nuclear Medicine
- 2006-2008 Stanford University Hospital & Clinics
• Resident, Division of Nuclear Medicine
- 2005-2006 Stony Brook University Hospital
• Internship, Department of Internal Medicine
- 1996-2005 Stony Brook University MSTP Program
• M.D., Ph.D. in Biomedical Engineering, M.S. in Anatomical Sciences
- 1992-1996 University of California at Berkeley
• B.S. in Molecular & Cell Biology, B.A. in Anthropology

Honors & Awards

- 2007 Radiological Society of North America Trainee Research Prize (co-author)
- 2007 Co-winner of the Norman D. Poe Memorial Scholarship Award for Outstanding In-Training Oral Abstract at the 32nd Annual Western Regional Society of Nuclear Medicine Meeting
- 2007 Selected Chief Nuclear Medicine Resident for 2007 – 2008
- 2004 Graduate Council Commendation to Distinguished Graduate Student
- 2004 Sigma Xi Award for Excellence in Research
- 2003 1st Place Poster at the 29th Annual IEEE Northeast Bioengineering Conference
- 1996 McCowen Prize for most outstanding graduating senior in anthropology

Grants

- 2004, 2003 Sigma Xi Travel Award
- 2003, 2002 Coulter Foundation Travel Award
- 2003 Paleoanthropology Society Travel Award
- 2003 IEEE Engineering in Medicine and Biology Travel Award
- 2002 National Osteoporosis Foundation Mazeness Summer Fellowship
- 1996 NIH Medical Scientist Training Program (MSTP) Fellowship

Research Experience

- 2006 – Division of Nuclear Medicine (Stanford University, CA)
• Numerous clinical and basic science research projects in nuclear medicine (see below).
- 2004 – 2005 Department of Anatomical Sciences (Stony Brook University, NY)
• Research on the function-structure relationship of the hominid distal phalanx.
- 2001 – 2004 Department of Biomedical Engineering (Stony Brook University, NY)
• Ph.D. research on the mechanics and improved diagnostics of trabecular fragility fractures.
- 1998 – 2000 • M.S. thesis on the material properties of mechanically stimulated trabecular sheep bone.
- 1998 – 2000 Department of Emergency Medicine (Stony Brook University, NY)
• Research on impact pressures of irrigation devices and their effects on tissue and healing.
- 1997 – 1999 Department of Anatomical Sciences (Stony Brook University, NY)
• Research on grip strength, hand morphology, and biomechanics in primates.
- Primate Foundation of Arizona (Mesa, AZ)

- 1996 • Research on environmental enrichment and infant-to-group socialization in chimpanzees.
- Field Station for Behavioral Research (U.C. Berkeley, CA)
- 1995 – 1996 • Bachelors honors thesis on adult male-infant interactions among captive Hanuman langurs.
- Ramnagar Monkey Research Project (Ramnagar, Nepal)
- 1995 • Research on hand preference in a troop of 30 wild Hanuman langurs.
- Genentech, Inc. (South San Francisco, CA)
- 1994 • Summer research internship on immunofluorescence staining of proteins and the development of a staining protocol for flow cytometry.

Teaching Experience

- 2002 – 2003 Women in Science & Engineering (Stony Brook University, NY)
• Project director for a six-week course (including lab) on “Mechanics in Biology” for freshman undergraduate women interested in science/engineering.
- 1997 – 1999, 2003 Department of Anatomical Sciences (Stony Brook University, NY)
• Teaching assistant for medical, allied health, and undergraduate gross anatomy; includes several guest lectures to medical, anatomy/anthropology, and undergraduate students.
- 1995 Department of Integrative Biology (U.C. Berkeley, CA)
• Teaching assistant for laboratory section of undergraduate biology course.
- 1993 – 1996 Student Learning Center (U.C. Berkeley, CA)
• Group and individual tutor in anthropology as well as administrative roles of hiring and training of new tutors.

Work Experience & Service

- 2003 – 2004 Kaplan (Long Island, NY)
• Instructor for GRE course.
- 1998 – 2000 Department of Emergency Medicine (Stony Brook University, NY)
• Co-coordinator for a viral meningitis drug trial.
- 1997 – 1999 Medical School Admissions Committee (Stony Brook University, NY)
• One of four student representatives for medical school admissions committee.
- 1997 – 1998 International Health Interest Group (Stony Brook University, NY)
• President of society to encourage non-traditional health occupations.
- 1994 – 1996 Anthropology Undergraduate Association (U.C. Berkeley, CA)
• President of organization for students interested in all aspects of anthropology.

Manuscripts (published)

- Mittra E, Rubin C, Qin Y-X (2008). Evaluation of trabecular mechanical and microstructural properties in human calcaneal bone of advanced age using mechanical testing, μ CT, and DXA.. *Journal of Biomechanics*. 41(2):368-75.
- Mittra E, Segall G (2007). Concurrent metabolic and osseous metastatic disease on a Tc99m-MDP bone scan. *European Journal of Nuclear Medicine and Molecular Imaging*. 34(12):2150.
- Mittra E, Vasanawala M, Niederkohr R, Rodriguez C, Segall G (2007). A case of three synchronous primary tumors demonstrated by F-18 FDG PET. *Clinical Nuclear Medicine*. 32(8):666-7.

- Mittra E, McDougall IR (2007). Recurrent silent thyroiditis: a report of four patients and review of the literature. *Thyroid*. 17(7):671-5.
- Mittra ES, Smith HF, Lemelin P, Jungers WL (2007). Comparative morphometrics of the primate apical tuft. *American Journal of Physical Anthropology*. 134(4):449-459.
- Mittra E, Akella S, Qin Y-X (2006). The effects of embedding material, loading rate and magnitude, and penetration depth in nanoindentation of trabecular bone. *Journal of Biomedical Materials Research Part A*. 79(1):86-93.
- Lin W, Mittra E, Qin Y-X (2006). Determination of ultrasound phase velocity in trabecular bone using time dependent phase tracking technique. *Journal of Biomechanical Engineering*. 128(1):24-9.
- Mittra E, Rubin C, Qin Y-X (2005). Interrelationship of trabecular mechanical and microstructural properties in sheep trabecular bone. *Journal of Biomechanics*. 38(6):1229-1237.
- Mittra ES, Singer AJ, Bluestein D, Hollander JD (2003). Simulated wound irrigation impact pressures. *Israeli Journal of Trauma, Critical Care, and Emergency Medicine*. 3(1):9-16.
- Rubin, C, Turner AS, Muller R, Mittra E, McLeod K, Lin W, Qin Y-X (2002). Quantity and quality of trabecular bone in the femur are enhanced by a strongly anabolic, non-invasive mechanical intervention. *Journal of Bone and Mineral Research*. 17(2): 349-357.
- Mittra ES, Fuentes AJ, McGrew WC (1997). Lack of hand preference in wild Hanuman langurs (*Presbytis entellus*). *American Journal of Physical Anthropology*. 103:455-461.

Manuscripts (in progress)

- Mittra E, Iagaru A. Hypermetabolic aortopulmonary uptake on PET/CT: Lymphadenopathy, pulmonary embolism, or sarcoma? *Molecular Imaging and Biology*. In preparation.
- Mittra E, Lowe S, Iagaru A, Fischbein N. Incidental note of chordoma in an individual with nasal cavity lymphoma. *Clinical Nuclear Medicine*. In preparation.
- Mittra E, McDougall IR. Graft-Versus-Host Disease seen with Leukocyte Scintigraphy. *European Journal of Nuclear Medicine and Molecular Imaging*. In preparation.
- Mittra E, Gamie S. Absent FDG uptake in metastatic, biopsy-proven Leydig-cell tumor with PET/CT. *Clinical Nuclear Medicine*. In preparation.
- Mittra E, Iagaru A, Fischbein N, Le Q, Gambhir SS, Quon A. 18F-FDG PET/CT in evaluation of patients with nasopharyngeal carcinoma. In preparation.
- Iagaru A, Mittra E, Quon A, Ikeda D, Daniel B, Herfkens R, McDougall IR, Gambhir SS. 18F-FDG PET/CT evaluation of patients with breast cancer. Submitted.
- Mittra E, Segall G. Intense, diffuse cardiac uptake with F-18 FDG PET. *Journal of Nuclear Cardiology*. In preparation.
- Mittra ES, Jungers WL. Comparison of Neandertal and modern human distal phalangeal structure: Morphometrics and microstructure. *American Journal of Physical Anthropology*. In preparation.
- Iagaru A, Mittra E, Quon A, Gambhir SS, McDougall IR. 18F-FDG PET/CT evaluation of patients with ovarian carcinoma. Submitted.

Book Chapters & Reviews

- Mittra E, Iagaru A, Quon A, Fischbein N. Skull base neoplasms. *PET clinics*. In press.
- Mittra E, Niederkohr R, El-Maghraby T, Rodriguez C, McDougall IR (2008). Uncommon causes of thyrotoxicosis. *Journal of Nuclear Medicine*. J Nucl Med. 49(2):265-278.
- Mittra E, Yaghoubi S, Qin Y-X. MicroPET imaging of small animals. In: *The Protocols in Musculoskeletal Research: A Practical Manual for Laboratory Techniques*. In press.
- Qin Y-X, Lin W, Xia Y, Mittra E, Rubin C, Müller R. Non-invasive bone quality assessment using quantitative ultrasound imaging and acoustic parameters. In: *Advanced Bioimaging Technologies in Assessment of the Quality of Bone and Scaffold Materials*. In press.
- Qin Y-X, Mittra E (2006). Bone density measurement. In J.G. Webster (Ed.), *Encyclopedia of medical devices and instrumentation*, 2nd Edition, Volume 1, pp. 550-558. Wiley-Interscience.

Abstracts (Selected)

1. Mittra E, Quon A, McDougall IR, Gambhir SS, Iagaru A (2008). 18F-FDG PET/CT in the evaluation of pediatric sarcoma. *Society of Nuclear Medicine*. New Orleans, LO.
2. Mittra E, Quon A, Fisher G, Kunz P, Gambhir S, Iagaru A (2008). Value of FDG PET/CT for the restaging of colorectal cancer after treatment with Erbitux. *American College of Nuclear Physicians*. Newport Beach, CA.
3. Mittra E, Quon A, Fischbein N, Kaplan M, Gambhir SS, Iagaru A (2007). 18F-FDG PET/CT in the evaluation of patients with head and neck carcinoma. *Western Regional Society of Nuclear Medicine Conference*. Anaheim, CA.
4. Mittra E, Iagaru A, Fischbein N, Le Q, Gambhir SS, Quon A (2007). 18F-FDG PET/CT in evaluation of patients with nasopharyngeal carcinoma. *Radiologic Society of North America*. Chicago, IL.
5. Iagaru A, Mittra E, Rodriguez C, Le Q, Gambhir SS, Quon A (2007). 18F FDG PET/CT evaluation of nasopharyngeal carcinoma patients: what is the definition of whole body scanning? *Radiologic Society of North America*. Chicago, IL.
6. Iagaru A, Malini V; Mittra E, Quon A, Ikeda D, Daniel B, et al. (2007). 18F FDG PET/CT evaluation of patients with breast cancer. *Radiologic Society of North America*. Chicago, IL.
7. Kim B, Dhath H, Mittra E, Do B, Graves E, Biswal S (2007). A Difference in the pattern of 18F-FDG uptake is observed within the spinal canal in low back pain patients. *Radiologic Society of North America*. Chicago, IL.
8. Mittra E, Iagaru A, Kaplan M, Fischbein N, Goris M, McDougall IR, Gambhir SS, Quon A (2007). 18F-FDG PET/CT in evaluation of patients with squamous cell carcinoma of the head and neck. *Society of Nuclear Medicine*. Washington, D.C.
9. Iagaru A, Mittra E, Rodriguez C, Kaplan M, Quon A, Gambhir SS (2007). 18F FDG PET/CT in squamous cell carcinoma of the head and neck: What is the definition of whole-body scanning? *Society of Nuclear Medicine*. Washington, D.C.
10. Iagaru A, Mittra E, Quon A, Gambhir SS, McDougall IR (2007). 18F FDG PET/CT evaluation of patients with ovarian carcinoma. *Society of Nuclear Medicine*. Washington, D.C.
11. Mittra E, Qin Y-X (2004). Linear elastic micro-FEM to assess continuum level mechanical behavior of trabecular bone: effect of microstructure and material properties. *5th Combined Meeting of the Orthopaedic Research Societies*. Banff, Alberta, Canada.
12. Nadel K, Grossman M, Mittra E (2004). Assessment of loop integrity in various arthroscopic knots and suture types. *Arthroscopy Association of North America*. Orlando, FL.
13. Mittra E, Ferreri S, Qin Y-X (2004). Using SCANCO μ FEM to derive the apparent modulus of trabecular bone from μ CT images. *Computational Methods in Orthopaedic Biomechanics (Pre-ORS) Meeting*. San Francisco, CA.
14. Mittra ES, Karnik S, Rubin C, Qin Y-X (2004). Variability in trabecular tissue properties across bone with disparate quantity and quality. *Orthopaedic Research Society*. San Francisco, CA.
15. Ferreri S, Mittra E, Gruber B, Qin Y-X (2004). Trabecular bone strength with virtual osteoporotic simulation and finite element analysis. *Journal of Bone and Mineral Research*. 19: S224-S224 Suppl.
16. Mittra E, Rubin C, Qin Y-X (2003). Interrelationship between microstructure and material properties in sheep trabecular bone. *Biomedical Engineering Society*. Nashville, TN.
17. Karnik S, Mittra E, Lin W, Demes B, Qin Y-X (2003). Changes in nano-scale trabecular material properties in osteoporotic human calcanei. *Biomedical Engineering Society*. Nashville, TN.
18. Mittra ES, Qin Y-X (2003). Material properties of sheep trabecular bone determined by nanomechanical testing. *IEEE 29th Annual Northeast Bioengineering Conference*. Abstract.
19. Mittra ES (2003). Evaluating the structure-function relationship of the apical tuft of the hominid distal phalanx. *Paleoanthropology Society*. Abstract.
20. Xia Y, Lin W, Mittra E, Demes B, Gruber B, Rubin C, Qin Y-X (2003). Performance of a confocal acoustic mapping in characterization of trabecular bone quality in human calcaneus. *Journal of Bone and Mineral Research*. 18: S209-S209 Suppl.
21. Qin Y-X, Mittra E, Lin W, Xia Y, Rubin C (2003). Non-invasive evaluation of trabecular bone density and strength using scanning ultrasound. *Bone* 32 (5): S182-S182 Suppl.
22. Mittra ES, Lin W, Rubin C, Qin Y-X (2002). Interrelationship of trabecular mechanical and microstructural properties. *Biomedical Engineering Society*. Abstract.
23. Mittra ES; Lin W, Rubin C, Qin Y-X (2002). Characterization of changes in trabecular bone with age and disease. *American Society for Bone and Mineral Research*. Abstract.

24. Mitra ES, Singer AJ (2000). Effects of distance on impact pressure of various common ED wound irrigation devices. *Society of Academic Emergency Medicine*. Abstract.
25. Mitra ES, Singer AJ (1999). Impact pressures of common ED wound irrigation devices. *Society of Academic Emergency Medicine*. Abstract.
26. Howell S, Mitra E (1997). Environmental enrichment and space utilization in captive groups of chimpanzees (*Pan troglodytes*). *Primate Newsletter*.

Theses

1. Mitra E (2004). Non-invasive assessment of trabecular bone quantity and quality using microstructure, micro-mechanics and micro-finite element modeling. *Doctoral Thesis*. Department of Biomedical Engineering, Stony Brook University.
2. Mitra E (2000). Trabecular bone material properties in response to low magnitude mechanical stimulation. *Masters Thesis*. Department of Anatomical Sciences, Stony Brook University.
3. Mitra E (1996). Adult male-infant interactions in a captive colony of Hanuman langurs (*Presbytis entellus*). *Honors Thesis*. Department of Anthropology, UC Berkeley.