BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Christopher F Njeh, Ph.D.	Assistant Adjunct Professor

EDUCATION

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Birmingham, UK	B.Sc.	1986-1989	Physics
University of Aberdeen, Scotland, UK	M.Sc	1989-1990	Medical Physics
Sheffield Hallam University, Sheffield, UK	Ph.D.	1990-1995	Physics

Professional Experience

Dec 03 - present: Assistant Adjunct Professor, California State University, Fresno, CA
July 03 - present: Staff Medical Physics, St Agnes Medical Center, Fresno, CA
Nov 01 – July 03: Clinical Medical Physics Resident, Johns Hopkins University, Baltimore, MD
July 99 - Oct 01: Assistant Professor, Radiology (Adjunct Series), University of California, San Francisco
Feb 97 - Jun 99: Visiting Postdoctoral Scholar, University of California, San Francisco, CA
Sept 94 - Jan 97: Clinical Research Scientist, Queen Elizabeth Hospital, Birmingham, UK

Honors and Awards

Best Clinician Poster Award, International Society of Clinical Densitometry, New Orleans, January, 1999, awarded for paper entitled "Potential Impact of foot length on QUS measurement: A pilot study"
1996 :Wellcome Trust-London, Travel Award

Scientific Reviewer

Lanset (UK),
Journal of Bone and Mineral Research,
Osteoporosis International
Calcified Tissue International
Medical Journal of Australia
Bone

Research And Creative Activity:

My research interests are in the physical measurement of bone especially the use of dual X-ray absorptiometry and quantitative ultrasound. I am also interests in the application of these methods to the management of bone diseases such as osteoporosis and rheumatoid arthritis. I am also interest in all aspect of quality assurance in the use of DXA and QUS.
In radiation therapy physics, I am interested in image guided radiation therapy, especially ways of minimizing motion during radiation therapy.

Selected Original Studies (peer-reviewed)

1. **Njeh C F**, Apple K, Temperton D, Boivin C. Radiological assessment of a new bone densitometer;- the Lunar EXPERT. *British J Radiology, 1996: 69(820); 335 - 40*

2. Langton C M, **Njeh CF**, Hodgkinson R and Currey J D. Prediction of mechanical properties of human calcaneus by broadband ultrasonic attenuation. *Bone, 1996: 18 (6): 495 - 503*

3. **Njeh C F**, Hodgskinson R and Langton C M. Orthogonal relationships between ultrasonic velocity and material properties of bovine cancellous bone. *Medical Engineering and Physics, 1996: 18(5); 373 - 381*

4. **Njeh C F** Osteoporosis: Two international conferences. *Scope, 1996; 5(2); 28 - 30.*

5. Hodgskinson R, **Njeh C F**, Whitehead MA and Langton CM. The non-linear relationship between BUA and porosity in cancellous bone. *Physics in Medicine and Biology, 1996; 41: 2411 -2420.*

6. **Njeh CF**, Wade PJ, Goldstone KE. Technical Note: The use of lead aprons in chest radiography. *Radiography, 1997; 3:* 143 - 147.

7. Hodgskinson R, **Njeh C F,** Currey J D and Langton C M. The ability of ultrasound velocity to predict the stiffnesss of cancellous bone in vitro. *Bone, 1997; 21(2), 183 -90*

8. **Njeh CF** and Langton CM. The effect of cortical endplates on ultrasound velocity through the calcaneus: an in vitro study. *British Journal of Radiology* , 1997; 70: 504 - 510.

9. **Njeh CF**, Samat SB, Nightingale A and Boivin CM. Radiation dose and in vitro precision in paediatric bone mineral density measurement using dual X-ray absorptiometry (DXA). *British Journal of Radiology, 1997; 70: 719 -727.*

10. **Njeh CF**, Kuo CW, Atrah HI and Boivin CM Prediction of human femoral bone strength using ultrasound velocity and BMD: an in vitro study. *Osteoporosis International* , 1997; 7: 471-477

11. **Njeh CF** and Boivin CM. Variation in bone mineral density between different anatomical sites in a normal local population. *Applied Radiation and Isotopes, 1998; 49: 685-686.*

12. Gough A, Sambrook P, Devlin J, Huissoon A, **Njeh C,** Robbins S, Nguyen T, Eisman J, Emery P . Osteoclastic Activation is the principal mechanism leading to secondary Osteoporosis in rhuematoid arthritis. *Journal of Rheumatology , 1998, 25: 1282-9.*

13. **Njeh CF**, Kearton JR, Hans D and Boivin CM, The use of quantitative ultrasound to monitor fracture healing: A feasibility study using phantom. *Medical Engineering and Physics , 1998: 20; 781-786*

14. **Njeh CF**, Boivin CM, Gough A, Hans D, Srivastav S, Bulmer N, Devlin J, Emery P, Evaluation of finger ultrasound in the assessment of bone status with application to rheumatoid arthritis. *Osteoporosis International , 1999: 9;82-90*

15. Hans D, Wu C, **Njeh CF**, Zhao S, Augat P, Newitt D, Link T, Lu Y, Majumdar S, Genant HK Ultrasound velocity of trabecular cubes reflects mainly bone density and elasticity: An in vitro study. *Calcified Tissue International , 1999; 64: 18-23*

16. Hans D, Srivastav SK**,** Singal C, Barkmann R, **Njeh CF,** Wu C, Kantorovich E , Genant HK Does combining the results from multiple bone sites measured by a new quantitative ultrasound improve discrimination of hip fracture. *J. Bone and Mineral Research , 1999; 14(4): 644-651*

17. Tsuda_Futami, E, Hans D**, Njeh CF**, Fuerst T. Fan B, J Li, and Genant, HK, An evaluation of a new gel-coupled ultrasound device for the quantitative assessment of bone. *British Journal of Radiology , 1999: 72; 691-700*

18. Cheng S, Suominen H, Ollikainen S, Goll J ,Sipila S, Taaffe D, Fuerst T, **Njeh CF** and Genant HK, Comparison of ultrasound and bone mineral density assessment of the calcaneus with different region of interest in healthy early menopausal women. *Journal of Clinical Densitometry, 1999: 2; 110-116*

19. **Njeh CF**, Richards A, Boivin CM, Hans D, Fuerst T and Genant HK. Factors influencing the propagation of ultrasound velocity through the proximal phalanges. *Journal of Clinical Densitometry, 1999: 2(3); 241-249*

20. Cheng S, Fan B, Wang L, Fuerst T, Lian M, **Njeh C**, He Y, Kern M, Lappin M, Tylavsky F, Casal D, Harris S and Genant HK. Factors affecting broadband ultrasound attenuation results of the calcaneus using a gel-coupled quantitative ultrasound scanning system. *Osteoporosis International 1999: 10(6); 495-504*.

21. **Njeh CF**, Hans D, Wu C, Kantorovich E, Sister M, Fuerst T and Genant HK. An in vitro investigation of the dependence on sample thickness of the speed of sound along the specimen. *Medical Engineering and Physics, 1999: 21(9) 651- 659*

22. Diessel E, Fuerst T**, Njeh CF,** Hans D, Cheng S and Genant HK, Evaluation of an imaging quantitative ultrasound: Comparison with densitometric measurements (QDR 4500) in the heel and the femur. *British Journal of Radiology; 2000: 73(1) 31- 5.*

23. He YQ, Fan B, Hans D, Li J, Wu CY, **Njeh CF**, Tsuda-Futami E, Fuerst T, and Genant HK. Assessment of a new quantitative ultrasound calcaneus measurement: Precision and discrimination of hip fractures in elderly women compared to dual X-ray absorptiometry. *Osteoporosis International; 2000;11,: 354-360*..

24. Wu, C.Y., Hans, D. He, Y. Fan, B. **Njeh, C.F**. Augat, P. Richards, J. Genant, H.K. The Role of Phalangeal Ultrasound Measurement in the Assessment of Bone Strength of the Distal Forearm. *Bone, 2000; 26(5); 529-533*

25. Diessel, E. Fuerst, T. **Njeh, C.F.** Tylavsky, F. Cauley, J. Dockrell, M and Genant, H.K. Evaluation of a new body composition phantom for quality control and cross-calibration of DXA devices. *Journal of Applied Physiology: 2000; 89: 599-605*

26. **Njeh, CF,** Hans, D, Li, J, Fan, B. Fuerst T, He Y.Q. Tsuda-Futami, E, Lu Y, Wu C.Y. and Genant, H.K. Comparison of six quantitaive ultrasound devices: Precision and hip fracture discrimination. *Osteoporosis International: 2000; 11(12): 1051-62*

27. **Njeh, C.F**. Wu, C. Fan, B. Hans, D. Fuerst, T. He, Y. and Genant H.K. Estimation of wrist fracture load using phalangeal speed of sound: an in vitro study. Ultrasound in Medicine and Biology: 2000, 26(9): 1517-23

28. **Njeh, C.F**. Shaw, N. Gardner-Medwin, J.M. Boivin, C.M. and Southwood T.R. Use of quantitative ultrasound to assess bone status in children with juvenile idiopathic arthritis: A pilot study. *Journal of Clinical Densitometry: 2000; 3 (3): 251-260*

29. Prevrhal, S. Fuerst, T. Fan, B. **Njeh, C.F**. Hans, D. Uffmann, M. Srivastav, S. and Genant H.K. Quantitative ultrasound of the tibia depends on both cortical density and thickness. *Osteoporosis International: 2001; 12(1), 28-34.*

30. **Njeh, C.F**. Chen, M.B. Fan, B. Grigorian, M. Shepherd, J.A. Saeed, I. Genant, H.K. Evaluation of a gel-coupled quantitative ultrasound device for bone status assessment. *Journal of Ultrasound in Medicine: 2001; 20: 1219-1228.*

31. **D**rake, W. M. **Njeh, C.F**. McClung M. Genant, H.K. Rosen, C. Watts N. and Kendler, D.L. Multisite bone ultrasound measurement on a North American female reference population. *Journal of Clinical Densitometry: 2001; 4(3): 239-48*

32. **Njeh, C.F**. Saeed, I. Grigorian, M. Kendler, D.L. Fan, B. Shepherd, J. McClung M. Drake W. and Genant, H.K. Assessment of bone status using speed of sound at multiple sites. *Ultrasound in Medicine and Biology: 2001; 27(10); 1337-45*

33. Cheng, S. **Njeh, C.F**. Fan, B. Cheng X. Hans D. Wang L. Fuerst, T and Genant H.K. Influence of region of interest and bone size on calcaneal BMD: implications for the accuracy of quantitative ultrasound assessment of the calcaneus. *British Journal of Radiology: 2002: 75(889); 59-68*

34. Grigorian, M. Shepherd, J.A. Cheng, X.G. **Njeh, C.F**. Toschke, J.O.And Genant H.K. Does osteoporosis classification using heel BMD agree across manufacturers? *Osteoporosis International: 13(8); 613-7.*

35. Shepherd, J.A. Cheng, X.G. Lu, Y. **Njeh, C.F**. Toschke, J.O. Engelke, K. Grigorian, M. and Genant, H.K. Universal standardization of forearm bone densitometry. *Journal of Bone and Mineral Research: 2002: 17(4): 734-45.*

36. Guglielmi G. Njeh, C.F. de Terlizzi F, de Serio D.A. Scillitani, A, Cammisa, M. Fan B. and Genant, H.K. Phalangeal quantitative ultrasound, phalangeal morphometric variables and vertebral fracture discrimination. Calcified Tissue International: 2003

Review Articles

37. **Njeh C F**, Boivin C M, Langton C M. The role of ultrasound in the assessment of osteoporosis: A review *Osteoporosis International, 1997; 7: 7 -22 .*

38. **Njeh CF**, Gordon CL, Hans D, Fuerst T and Genant HK, The new generation of bone densitometers. Contemporary OB/GYN, 1998; 43: 15-40.

39. **Njeh CF** and Hans D, The utility of quantitative ultrasound in bone status assessment: A review *Medical Imaging International ; 1998: 8(5), 12-16*

40. Hans D, **Njeh CF**, Genant HK and Meunier PJ Quantitative ultrasound in bone status assessment. *Revue du Rhumatisme Rev. Rhum, (Engl Ed.), 1998, 65, 489-498*

41. Langton CM and **Njeh CF**, Sound-Tissue Interaction: The physical basis of bone ultrasonometry and limitations of existing methods. *J. Clinical Densitometry,1998: 1(3) 295-301*

42. Langton CM and **Njeh CF**. Ultrasonic characterization of a porous solid, cancellous bone . *Nondestructive Test Evaluation, 1998; 14: 257-276*

43. **Njeh CF**, Fuerst T, Hans D, Blake GM and Genant H.K Radiation exposure in bone mineral density assessment. *Appl. Radiat. Isot , 1999, 50 (1), 215- 236*

44. Langton CM and **Njeh CF** Acoustic and ultrasonic tissue characterization- assessment of osteoporosis, Proc Institution Mechanical Engineers *, part H (The Journal of Engineering in Medicine): 1999; 231; 261-269*

45. Genant HK and **Njeh CF**, Radiology Masterclass: An update on the diagnosis of osteoporosis, *Current Orthopedics ; 1999: 13(2): 144-155.*

46. **Njeh, C.F** and Genant H.K. Quantitative imaging techniques for assessing bone mass in rheumatoid arthritis: Review: Arthritis Research: 2000; 2(6); 446-450

47. **Njeh, C. F.** Fuerst, T. Diessel E. and Genant, H.K. Is quantitative ultrasound dependent on bone structure ? A reflection. Osteoporosis International: 2001; 12(1): 1- 15.

48. **M**ohr A., **Njeh CF** Guermazi, A, Genant, HK. Quantitativer ultraschall. J. Miner stoffwechs, 2002: 9(4): 32-35

Book

Njeh CF, Hans, D, Glueer CC, Fuerst T and Genant HK (Editors)
Quantitative ultrasound: Assessment of Osteoporosis and Bone Status, Martin Dunitz Ltd, London, 1999

Langton C. M., Njeh C.F (Editors)
Physical measurement of bone. Institute of Physics. Institute of Physics, Bristol, UK, 2003.

Chapter in Books

1. Hans D. Gluer C and **Njeh CF** Ultrasound Evaluation of Osteoporosis, In Meunier PJ, editor, Osteoporosis, Diagnosis and Management, Martin Dunitz Ltd. 1998; pp 59-78.

2. **Njeh CF** and Hans D. Commercial Ultrasound Instrument, In Blake GM, Wahner HW, Fogelman I, eds. The evaluation of osteoporosis: Dual energy X-ray and absorptiometry and ultrasound in Clinical practice, Martin Dunitz Ltd, 1999; pp127-146.

3. **Njeh CF**, Fuerst T, Hans D, Blake GM and Genant H Radiation exposure in bone mineral density assessment.In Kwan-Hoong Ng, Bradley DA and Warren-Forward H.M.eds, Subject dose from radiological examinations *Elsevier Science Ltd, London ,1999, pp 215-259*

4. **Njeh C.F.**, Cheng X.G., Elliot J.M. and Meunier P.J. Bone , bone Disease and bone quality. In editors: Njeh CF, Hans, D, Glueer CC, Fuerst T and Genant HK, Quantitative ultrasound : Assessment of Osteoporosis and Bone Status, Martin Dunitz Ltd, London, 1999 , pp 1-20

5. **Njeh C.F.**, Nicholson P.H. and Langton C.M. Physics of quantitative ultrasound applied to bones. . In editors: Njeh CF, Hans, D, Glueer CC, Fuerst T and Genant HK, Quantitative ultrasound : Assessment of Osteoporosis and Bone Status, Martin Dunitz Ltd, London, 1999; pp 67 - 76

6. **Njeh C.F.** and Blake G.M., Clinical quantitative ultrasound calcaneal water coupled systems. In editors: Njeh CF, Hans, D, Glueer CC, Fuerst T and Genant HK, Quantitative ultrasound : Assessment of Osteoporosis and Bone Status, Martin Dunitz Ltd, London, 1999; pp 109 -124 .

7. Fuerst T, **Njeh CF,** Hans D, Quality Assurance and quality control in quantitative ultrasound. In editors: Njeh C.F., Hans, D., Glueer C.C., Fuerst T. and Genant H.K., Quantitative ultrasound : Assessment of Osteoporosis and Bone Status, Martin Dunitz Ltd, London, 1999; pp 163- 174

8. Nicholson P.H. and **Njeh C.F.**, Ultrasonic studies of cancellous bone in vitro. In editors: Njeh CF, Hans, D, Glueer CC, Fuerst T and Genant HK, Quantitative ultrasound : Assessment of Osteoporosis and Bone Status, Martin Dunitz Ltd, London, 1999; pp 195- 220.

9. **Njeh C.F.**, Jergas M. and Genant H.K. Bone density and Imaging of osteoporosis. In editors DeGroot LJ, and Jameson JL, Endocrinology, IV edition, WB Saunders Company, 2000: Chapter 85, Pp 1187 - 1206.

10. Genant H.K. and **Njeh C.F.** Bone mass measurement. In editors Coe F and Favus M. Disorders of Mineral Metabolism, second edition, Lippincott (in press)

11. **Njeh CF,** Cheng S, van Kuijk C, Wu CY, Harris S, Genant HK Osteoporosis, In Mendelson EB, Reuter KL, Bohm-Velez M and Rubin E, Women's imaging, Mosby, Philadelphia. (Submitted)

Book Review

Scope 5(4) 1996, pp 64.
Medical Physics, 2003: 30(10), 2857

Letters to the Editor

Njeh CF and Blake GM Radiation Dose from DXA Scanning to reproductive tissues of females
Journal of Clinical Densitometry, 1999, 2(2): 191-192.

Njeh, C.F. Fuerst T. Diessel, E. and Genant, H.K. Association between QUS and structural parameters.
Calcified Tissue International: 2000; 67: 273-274.

Njeh C.F. and Genant H.K. Evaluation of a gel-coupled QUS device. Osteoporosis International, 2000; 726-726.