

Obituary: Shelley Rae Saunders (1950–2008)

Charles FitzGerald*

Department of Anthropology, McMaster University, Toronto

Shelley Saunders, a distinguished physical anthropologist and well loved professor at McMaster University in Canada, finally succumbed in 2008 to the cancer that had haunted her through the last decade and a half of her life. She was no pushover for the disease, which struck first in the early 1990s, and was thought to have been cured, but which returned again, resulting in the loss of both of her kidneys in 2003. This necessitated daily haemodialysis that constrained her ability to travel, but had no material effect on her research output and her teaching until the cancer reappeared in her pancreas more than four years later. Her audacious battle was emblematic of the way she approached life. She resisted, uncomplaining, with great fortitude and with all of her might until the very end. Shelley did not need urging not to go gently into that good night, nor to rage, rage against the dying of the light. Nevertheless, she was taken in the early autumn of her life; there are few of whom it can so sincerely be said, she had so much more to give.

In many respects Shelley was a renaissance scholar in our field, as a glance at her bibliography will show. Her primary focus was on dental and skeletal biology and bioarchaeology and forensics, but her scope of interest was very broad. She also published on evolutionary theory, demography, isotopic and palaeodiet studies and was a pioneer in ancient DNA. Her honours are legion and her career is marked by a long series of “firsts”. She was the first biological anthropologist to be elected to the Royal Society of Canada, a signal honour. She was in the first tranche of Tier 1 Canada Research Chairs, a federal grant, tenable for seven years, awarded to outstanding researchers acknowledged by their peers as world leaders in their fields. Shelley initiated the Children and Childhood in Human Societies research network. She founded and established an ancient DNA laboratory at McMaster, now called the McMaster Ancient DNA Centre, and she created and later expanded the McMaster Anthropology Hard Tissue and Light Microscopy Laboratory to study growth and development. Although set up to investigate both bones and teeth, concentration in the last decade or more had been on teeth, with particular emphasis on odontochronological analysis in deciduous teeth. She was the recipient of many academic awards, but despite her elite stature in Canada she was



Fig. 1. Shelley at work in her laboratory (photo courtesy of the *Hamilton Spectator* newspaper).

an extraordinarily humble person—quiet, reserved, gentle, kind, and scrupulously fair—more likely to talk about the achievements of her many students than about her own.

Devotion to her students was one of Shelley’s hallmarks. She loved to teach and was indeed an educator of distinction, someone who relished training bright

*Correspondence to: Charles FitzGerald, Department of Anthropology, McMaster University, Canada
E-mail: drtooth59@cogeco.ca



Fig. 2. A younger Shelley in front of an unidentified Mesoamerican pyramid.

minds. She was dedicated to getting undergraduates engrossed in learning and discovery. She invented innovative ways to achieve this, and was famous amongst students for her Bone Groan quizzes, for her dental Jeopardy games, her Bioanth Bingo and skeletal crossword puzzles. However, Shelley's greatest enjoyment came from working with and developing her graduate students, and she took enormous pride in their accomplishments. Her skilled supervision and devoted mentorship earned her the President's Award for Excellence in Graduate Supervision at McMaster and her former students now teach at universities across Canada, the United States and Europe. One of her last acts demonstrates her commitment to students. At her behest, just days before her death, she and her family established the Shelley Saunders Graduate Scholarship with a generous donation of \$500,000, which was supplemented by contributions from friends and well wishers of another \$50,000. This fund will sponsor annually two graduate students who wish to pursue research in dental or skeletal biology at McMaster. The Canadian Association of Physical Anthropologists, of which she was an active member through her whole career, has also established a grant in her honour to

provide supplemental research funding for graduate students.

Shelley grew up in Toronto and New Jersey and met Victor Koloshuk, her beloved husband of 37 years, while they were both undergraduates. She received her Ph.D. in Anthropology from the University of Toronto in 1977, defending her dissertation while pregnant with their first child, Robert. After the birth of their second child, Barbara, and after teaching anatomy at McGill and contract teaching at the University of Toronto, she was offered a tenure-track position in the Department of Anthropology at McMaster University in 1981. She went on to become the central pillar of McMaster's program in physical anthropology and her numerous research projects over the years received international recognition. Among the most notable was a complex, multidisciplinary project that she directed on a large nineteenth-century cemetery from St. Thomas' Anglican Church in Belleville, Ontario, which presented the rare opportunity to work with skeletal and dental material associated with individuals of known age-at-death. Shelley's projects also took her to Europe, for instance to the University of Bordeaux where she was involved in the analysis of a medieval population from south-western France, or the Czech Republic where she conducted histological analysis of ancient Egyptian pharaonic samples. She developed a particularly rich collaboration with Italian colleagues from the Pignorini Museum in Rome on the Imperial Roman site of Isola Sacra. She was also familiar to the Canadian media through her work in forensic anthropology for the Hamilton Regional Forensic Pathology Unit and a number of local and Royal Canadian Mounted police forces, where some of her cases often received considerable attention. Shelley had a very prolific publication record, amongst which were six co-edited volumes, the latest, *Biological Anthropology of the Human Skeleton*, co-edited with Anne Katzenberg, was published in March of 2008. She served on the editorial board of the *American Journal of Physical Anthropology* from 1994 to 2000 and was North American Editor of the *International Journal of Osteoarchaeology* until shortly before her death.

Shelley was a great teacher, a nonpareil researcher, an expert biological anthropologist, a wonderful colleague, an avid gardener and opera fan, and before dialysis curtailed it, someone who loved to travel. She possessed all of the qualities required for distinction in any field: keen intelligence, great tenacity, the capacity for hard work, terrific organising and planning skills, and an ability to extract the best from those around her. She will be remembered with deep affection by a host of current and former graduate students, friends, and colleagues. Her contributions to our field will also be sorely missed.

Shelley R. Saunders

Bibliography

- Prowse TL, Saunders SR, FitzGerald CM, Bondioli L, Macchiarelli R. 2009. Growth, morbidity, and mortality in antiquity: a case study from Imperial Rome. In: Moffat T, Prowse TL, eds. *Human Diet And Nutrition In Biocultural Perspective* (In Press). Oxford: Berghahn.
- Cardoso HF, Saunders SR. 2008. Two arch criteria of the ilium for sex determination of immature skeletal remains: a test of their accuracy and an assessment of intra- and inter-observer error. *Forensic Sci Int* 178:24-29.
- Katzenberg MA, Saunders SR, eds. 2008. *Biological anthropology of the human skeleton*, second edition. New York: Wiley.
- Prowse TL, Saunders SR, Schwarcz HP, Garnsey P, Macchiarelli R, Bondioli L. 2008. Isotopic and dental evidence for infant and young child feeding practices in an imperial Roman skeletal sample. *Am J Phys Anthropol*.
- Saunders SR. 2008. Subadult skeletons and growth-related studies. In: Katzenberg MA, Saunders SR, eds. *Biological anthropology of the human skeleton*, second edition. New York: Wiley. p 117-148.
- Saunders SR, Rainey DL. 2008. Nonmetric trait variation in the skeleton: abnormalities, anomalies, and atavisms. In: Katzenberg MA, Saunders SR, eds. *Biological anthropology of the human skeleton*, second edition. New York: Wiley. p 533-560.
- Saunders SR, Chan AH, Kahlon B, Kluge HF, FitzGerald CM. 2007. Sexual dimorphism of the dental tissues in human permanent mandibular canines and third premolars. *Am J Phys Anthropol* 133:735-740.
- von Hunnius TE, Yang D, Eng B, Wayne JS, Saunders SR. 2007. Digging deeper into the limits of ancient DNA research on syphilis. *J Arch Sc* 34:2091-2100.
- Albanese J, Saunders SR. 2006. Is it possible to escape racial typology in forensic identification? In: Schmitt A, Cunha E, Pinheiro J, eds. *Forensic anthropology and medicine: complementary sciences from recovery to cause of death*. Totowa, NJ: Humana Press. p 281-316.
- Beauchesne P, Saunders SR. 2006. A test of the revised Frost's 'rapid manual method' for the preparation of bone thin sections. *Int J Osteoarch* 16:82-87.
- FitzGerald CM, Saunders SR, Bondioli L, Macchiarelli R. 2006. Health of infants in an Imperial Roman skeletal sample: Perspective from dental microstructure. *Am J Phys Anthropol* 130:179-189.
- von Hunnius TE, Roberts CA, Boylston A, Saunders SR. 2006. Histological identification of syphilis in pre-Columbian England. *Am J Phys Anthropol* 129:559-566.
- Albanese J, Cardoso HFV, Saunders SR. 2005. Universal methodology for developing univariate sample-specific sex determination methods: an example using the epicondylar breadth of the humerus. *J Arch Sc* 32:143-152.
- FitzGerald CM, Saunders SR. 2005. Test of histological methods of determining chronology of accentuated striae in deciduous teeth. *Am J Phys Anthropol* 127:277-290.
- Katzenberg MA, Oetelaar G, Oetelaar J, FitzGerald CM, Yang DY, Saunders SR. 2005. Identification of historical human skeletal remains: a case study using skeletal and dental age, history and DNA. *Int J Osteoarch* 15:61-72.
- Prowse TL, Schwarcz HP, Saunders SR, Macchiarelli R, Bondioli L. 2005. Isotopic evidence for age-related variation in diet from Isola Sacra, Italy. *Am J Phys Anthropol* 128:2-13.
- Prowse TL, Schwarcz HP, Saunders SR, Macchiarelli R, Bondioli L. 2004. Isotopic paleodiet studies of skeletons from the Imperial Roman-age cemetery of Isola Sacra, Rome, Italy. *J Arch Sc* 31:259-272.
- Yang DY, Cannon A, Saunders SR. 2004. DNA species identification of archaeological salmon bone from the Pacific Northwest Coast of North America. *J Arch Sc* 31:619-631.
- Dudar JC, Wayne JS, Saunders SR. 2003. Determination of a kinship system using ancient DNA, mortuary practice, and historic records in an upper Canadian pioneer cemetery. *Int J Osteoarch* 13:232.
- Yang DY, Eng B, Saunders SR. 2003. Hypersensitive PCR, ancient human mtDNA, and contamination. *Hum Biol* 75:355-364.
- Saunders SR, Herring DA, Sawchuk LA, Boyce G, Hoppa RD, Klepp S. 2002. The health of the middle class: The St. Thomas' Anglican Church Cemetery Project. In: Steckel RH, Rose JC, eds. *The backbone of history: health and nutrition in the western hemisphere*. Cambridge: Cambridge University Press. p 130-161.
- Strouhal E, Vyhnánek L, Gaballah MF, Saunders SR, Woelfli W, Bonani G, Nemeckova A. 2001. Identification of royal skeletal remains from Egyptian pyramids. *Anthropologie* XXXIX:15-23.
- Katzenberg MA, Saunders SR, Abonyi S. 2000. Bone chemistry, food and history: A case study from 19th century Upper Canada. In: Ambrose SH, Katzenberg MA, eds. *Biogeochemical approaches to paleodietary analysis*. New York: Plenum. p 1-22.
- Katzenberg MA, Saunders SR, eds. 2000. *Biological anthropology of the human skeleton*. New York: Wiley.
- Saunders SR. 2000. Subadult skeletons and growth-related studies. In: Katzenberg MA, Saunders SR, eds. *Biological anthropology of the human skeleton*. New York: Wiley. p 135-161.
- Saunders SR, Hoppa RD, Macchiarelli R, Bondioli L. 2000. Investigating variability in human dental development in the past. *Anthropologie* XXXVIII:101-107.

- FitzGerald CM, Saunders SR, Macchiarelli R, Bondioli L. 1999. Large scale histological assessment of deciduous crown formation. In: Mayhall JT, Heikkinen T, eds. Proceedings of the 11th International Symposium of Dental Morphology, Aug 26-30, 1998, Oulu, Finland. Oulu, Finland: Oulu University Press. p 92-101.
- Garlie TN, Saunders SR. 1999. Midline facial tissue thicknesses of subadults from a longitudinal radiographic study. *J Forensic Sci* 44:61-67.
- Saunders SR, Yang DY. 1999. Sex determination: XX or XY from the human skeleton. In: Fairgrieve SI, ed. Forensic osteological analysis: a book of case studies. Springfield, IL: Charles C. Thomas. p 36-59.
- Saunders SR, Keenleyside A. 1999. Enamel hypoplasia in a Canadian historic sample. *Am J Hum Biol* 11:513-524.
- Saunders SR, Barrans L. 1999. What can be done about the infant category in skeletal samples? In: Hoppa RD, FitzGerald CM, eds. Human growth in the past. Cambridge, England: Cambridge University Press. p 183-209.
- Herring DA, Saunders SR, Katzenberg MA. 1998. Investigating the weaning process in past populations. *Am J Phys Anthropol* 105:425-439.
- Hoppa RD, Saunders SR. 1998. Two quantitative methods for rib seriation in human skeletal remains. *J Forensic Sci* 43:174-177.
- Hoppa RD, Saunders SR. 1998. The MAD legacy: how meaningful is mean age-at-death in skeletal samples? *Human Evolution* 13:1-14.
- Saunders SR. 1998. Erratum: Dental caries in nineteenth century Upper Canada. *Am J Phys Anthropol* 104:71-87. *Am J Phys Anthropol* 105:405.
- Strouhal E, Fawzi Gaballah M, Bonani G, Woelfli W, Nemeckova A, Saunders SR. 1998. Re-Investigation of the remains thought to be of King Djoser and those of an unidentified female from the Step Pyramid at Saqqara. In: Eyre CJ, ed. Proceeding of the Seventh International Congress of Egyptologists. Leuven: Uitgeverij Peeters Publishers.
- Yang DY, Eng B, Waye JS, Dudar JC, Saunders SR. 1998. Technical note: improved DNA extraction from ancient bones using silica-based spin columns. *Am J Phys Anthropol* 105:539-543.
- Grolleau-Raoux JL, Crubezy E, Rouge D, Brugne JF, Saunders SR. 1997. Harris lines: a study of age-associated bias in counting and interpretation. *Am J Phys Anthropol* 103:209-217.
- Saunders SR, Hoppa RD. 1997. Sex allocation from long bone measurements using logistic regression. *Can Soc Forensic Sci J* 30:49-60.
- Saunders SR, DeVito C, Katzenberg MA. 1997. Dental caries in nineteenth century upper Canada. *Am J Phys Anthropol* 104:71-87.
- Sperduti A, Bondioli L, Hoppa RD, Prowse TL, Salomone F, Saunders SR, Yang YH, Macchiarelli R. 1997. Il segmento infanto-giovanile della comunità romana imperiale del Portus Romae. *Antropologia Contemporanea XII Congresso degli Antropologi Italiani. Storia del Popolamento del Mediterraneo: Aspetti Antropologici, Archeologici e Demografici*, Palermo.
- Brugne JF, Cleuvenot E, Murail P, Pujol J, Rouge D, Saunders SR. 1996. Un homme grand et jeune. In: Crubezy E, Dieulafait C, eds. *Le comte de l'An Mil* (Supp. 8). Talence: Federation Aquitania.
- Katzenberg MA, Herring DA, Saunders SR. 1996. Weaning and infant mortality: evaluating the skeletal evidence. *Yrbk Phys Anthropol* 39:177-199.
- Saunders SR. 1995. The enduring tension: conflicts between Darwinian and Lamarckian models of inheritance. In: Herring DA, Chan L, eds. *Strength in diversity*. Toronto: Canadian Scholar's Press. p 1-20.
- Saunders SR, Herring DA, eds. 1995. *Grave reflections. Portraying the past through cemetery studies*. Toronto: Canadian Scholars' Press.
- Saunders SR, Herring DA, Sawchuk LA, Boyce G. 1995. The nineteenth-century cemetery at St. Thomas' Anglican Church, Belleville: skeletal remains, parish records, and censuses. In: Saunders SR, Herring DA, eds. *Grave reflections: portraying the past through cemetery studies*. Toronto: Canadian Scholars' Press. p 93-118.
- Saunders SR, Herring DA, Boyce G. 1995. Can skeletal samples accurately represent the living populations they come from? The St. Thomas' cemetery site, Belleville, Ontario. In: Grauer AJ, ed. *Bodies of Evidence: reconstructing history through skeletal analysis*. New York: John Wiley & Sons Inc. p 69-89.
- Hoppa RD, Saunders SR. 1994. The δ /method for examining bone growth in juveniles: A reply. *Int J Osteoarch* 4:261-263.
- Rogers TL, Saunders SR. 1994. Accuracy of sex determination using morphological traits of the human pelvis. *J Forensic Sci* 39:1047-1056.
- Dudar JC, Pfeiffer S, Saunders SR. 1993. Evaluation of morphological and histological adult skeletal age-at-death estimation techniques using ribs. *J Forensic Sci* 38:677-685.
- Katzenberg MA, Saunders SR, Fitzgerald WR. 1993. Age differences in stable carbon and nitrogen isotope ratios in a population of prehistoric maize horticulturists. *Am J Phys Anthropol* 90:267-281.
- Saunders SR, Hoppa RD, Southern R. 1993. Diaphyseal growth in a nineteenth century skeletal sample of subadults from St Thomas' church, Belleville, Ontario. *Int J Osteoarch* 3:265-281.
- Saunders SR, Hoppa RD. 1993. Growth deficit in survivors and nonsurvivors—biological mortality bias in subadult skeletal samples. *Yrbk Phys Anthropol* 36:127-151.

- Saunders SR, DeVito C, Herring DA, Southern R, Hoppa RD. 1993. Accuracy tests of tooth formation age estimations for human skeletal remains. *Am J Phys Anthropol* 92:173-188.
- Saunders SR. 1992. Can revisionism, in evolutionary biology help in formulating hypotheses about hominid evolution? *Human Evolution* 7:25-35.
- Saunders SR, Herring DA, Ramsden PG. 1992. Transformation and disease: precontact Ontario Iroquoians. In: Verano JW, Ubelaker DH, eds. *Disease and Demography in the Americas*. Washington: Smithsonian Institution Press. p 117-126.
- Saunders SR. 1992. Subadult skeletons and growth related studies. In: Saunders SR, Katzenberg MA, eds. *Skeletal biology of past peoples: research methods*. New York: Wiley-Liss. p 1-20.
- Saunders SR, Katzenberg MA, eds. 1992. *Skeletal biology of past peoples: research methods*. New York: Wiley-Liss.
- Saunders SR, FitzGerald CM, Rogers TL, Dudar JC, McKillop H. 1992. A test of several methods of skeletal age estimation using a documented archaeological sample. *Can Soc Forensic Sci J* 25:97-118.
- Herring DA, Saunders SR, Boyce G. 1991. Bones and burial registers: infant mortality in a 19th-century cemetery from Upper Canada. *Northeast Hist Arch* 20:54-70.
- Saunders SR. 1991. The Snake Hill Skeletal Sample: sex determination, stature, and limb bone size and shape variation. In: Pfeiffer S, Williamson RF, eds. *Snake Hill: an investigation of a military cemetery from the War of 1812*. Toronto: Dundurn Press.
- Saunders SR, DeVito C. 1991. Subadult skeletons in the Raymond Dart Anatomical Collection: research potential. *Human Evolution* 6:421-434.
- Saunders SR, Lazenby RA, eds. 1991. *The links that bind: the Harvie Family Nineteenth Century Burying Ground*. Dundas, Ont: Copetown Press.
- DeVito C, Saunders SR. 1990. A discriminant function analysis of deciduous teeth to determine sex. *J Forensic Sci* 35:845-858.
- Saunders SR, Melbye JF. 1990. Subadult mortality and skeletal indicators of health in Late Woodland Ontario Iroquois. *Canadian Journal of Archaeology* 14:61-74.
- Lazenby RA, Oliver L, Saunders SR. 1989. Use of rib histomorphometry as an aid in the personal identification of unknown skeletons: the paleophysiology of three hanged men. *Can Soc Forensic Sci J* 22:261-272.
- Saunders SR. 1989. Nonmetric skeletal variation. In: Iscan MY, Kennedy KAR, eds. *Reconstruction of life from the skeleton*. New York: Alan R. Liss. p 95-108.
- Saunders SR. 1989. What's read in the bone. *Rotunda* 21:47-53.
- Saunders SR. 1988. Bone growth, modeling and remodeling. *Recherches amérindiennes au Québec* 18:49-58.
- Saunders SR, Mackenzie-Ward D. 1988. The Reid Site human burials. *KEWA* 88:21-26.
- Saunders SR. 1987. Growth remodeling of the human femur. *Canad Rev Phys Anthropol* 6:20-30.
- Mayhall JT, Saunders SR. 1986. Dimensional and discrete dental trait asymmetry relationships. *Am J Phys Anthropol* 69:403-411.
- Saunders SR, Spence MA. 1986. Dental and skeletal age determinations of Ontario Iroquois infant burials. *Ont Arch* 46:21-26.
- Saunders SR. 1985. The inheritance of acquired characteristics: a concept that will not die. In: Godfrey LR, ed. *What Darwin began: modern Darwinian and Non-Darwinian perspectives on evolution*. Boston: Allyn and Bacon. p 148-161.
- Saunders SR. 1985. Inheritance and evolution: the role of Lamarckism in contemporary biology. *Canad Rev Phys Anthropol* 4:93-100.
- Saunders SR. 1985. Surface and cross-sectional comparisons of bone growth remodeling. *Growth* 49:105-130.
- Mayhall JT, Saunders SR, Belier PL. 1982. The dental morphology of North American whites: a reappraisal. In: Kurtén B, ed. *Teeth: form, function, and evolution*. New York: Columbia University Press. p 245-258.
- Saunders SR, Mayhall JT. 1982. Fluctuating asymmetry of dental morphological traits: new interpretations. *Hum Biol* 54:789-799.
- Saunders SR, Mayhall JT. 1982. Developmental patterns of human dental morphological traits. *Arch Oral Biol* 27:45-49.
- Saunders SR, Popovich F, Thompson GW. 1980. A family study of craniofacial dimensions in the Burlington Growth Centre sample. *Am J Orthod* 78:394-403.
- Saunders SR, Popovich F. 1978. A family study of two skeletal variants: atlas bridging and clinoid bridging. *Am J Phys Anthropol* 49:193-203.
- Saunders SR. 1978. *The development and distribution of discrete traits of the human infracranial skeleton*. Ottawa: Archaeological Survey of Canada, Mercury Series No. 81.

Compiled by:

Charles FitzGerald
Department of Anthropology
McMaster University
Canada