

STATE OF WISCONSIN : CIRCUIT COURT : MANITOWOC COUNTY

STATE OF WISCONSIN,)	
)	
Plaintiff,)	
)	Case No. 05-CF-381
v.)	
)	Honorable Judge Angela Sutkiewicz,
STEVEN A. AVERY,)	Judge Presiding
)	
Defendant.)	
)	

AFFIDAVIT OF STEVEN A. SYMES, PhD, D-ABFA

Now comes your affiant, Steven A. Symes, PhD, D-ABFA, and under oath hereby states as follows:

1. I am of legal majority and can truthfully and competently testify to the matters contained herein based upon my personal knowledge. The factual statements herein are true and correct to the best of my knowledge, information, and belief. I am of sound mind and I am not taking any medication nor have I ingested any alcohol that would impair my memory of the facts stated in this affidavit.

2. I have a PhD in Physical Anthropology with an emphasis on Forensic Anthropology and am currently employed as a Forensic anthropologist by the Department of the Mississippi State Medical Examiner. I have testified extensively in forensic trauma to bone and surrounding tissues. The principal topic of my research and experience has been trauma injuries to the skeleton, including ballistic, blunt, burning, healing bone, with a specific focus on sharp force trauma. A copy of my CV is attached as Exhibit A to this affidavit.

3. I have reviewed all of the photographs of suspected human pelvic bones from evidence tag number 8675 taken by Dr. Leslie Eisenberg, forensic anthropologist. I have also



reviewed trial testimony relevant to the attempted identification of pelvic bones found in the Manitowoc County gravel pit, evidence tag number 8675, including the testimony of Dr. Leslie Eisenberg and Dr. Scott Fairgrieve.

4. It is my opinion, based upon a reasonable degree of scientific certainty in the field of forensic anthropology, that:
 - a. a microscopic examination of the suspected human pelvic bone, performed in 2005, would have determined to a high percentage of accuracy, whether the pelvic bones were human; and
 - b. histological slides, made in 2005 from the suspected human pelvic bones, would have determined to a high percentage of accuracy, whether the pelvic bones in evidence tag number 8675 were human.
5. It is also my opinion, based upon a reasonable degree of scientific certainty in the field of forensic anthropology, that it is certainly below the standard of practice for a reasonably well qualified and competent forensic anthropologist, at this current time and place, to not perform microscopic and histological examinations of the possible human pelvic bones, and it may have been below the standard of practice in 2005, for a reasonably well qualified and competent forensic anthropologist, to not have performed microscopic and histological examinations of the possible human pelvic bones, in evidence tag number 8675.
6. Further, it was below the standard of practice for a reasonably well qualified and competent forensic anthropologist to have relied exclusively upon photographs of the pelvic bones to complete the forensic examination.

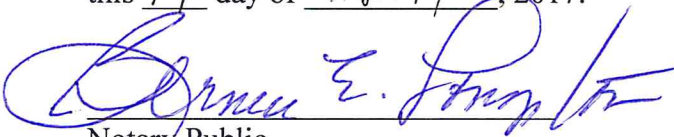
7. It is also my opinion, based on a reasonable degree of scientific certainty in the field of forensic anthropology, that it may be below the standard of practice in 2005, for a reasonably well qualified and competent forensic anthropologist to have performed an examination and interpretation of bone trauma without microscopic/microscopic assistance.

FURTHER AFFIANT SAYETH NAUGHT



Steven A. Symes, PhD, D-ABFA

Subscribed and sworn before me
this 19 day of April, 2017.



Notary Public



Steven A. Symes, PhD, D-ABFA
Curriculum Vitae

2017



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Mississippi Crime Laboratory
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Pearl, Mississippi 39208-6060
(601) 420-9146 Symes office
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Steven A Symes, PhD, D-ABFA
Forensic Anthropologist,
State of Mississippi Medical Examiner's Office

Professor Emeritus in the Ridge College, Mercyhurst University (May 2016)

Extraordinary Professor for the University of Pretoria School of Medicine, Pretoria, South Africa

Adjunct Professor, University of San Carlos, Guatemala City. Forensic Science master's degree.

Principal Service/Research Interests

Human skeletal biology and skeletal anatomy. Due to specialization, best recognized for forensic toolmark and fracture pattern interpretation, including most aspects of trauma to bone. Among them:

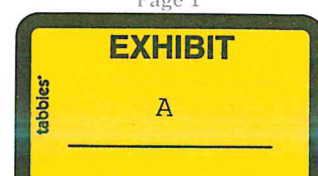
- sharp force trauma... special expertise in knife and saw marks in bone
- ballistic trauma
- peri- vs postmortem influences on bone
- healing and acute trauma to bone specific to infants
- blunt force trauma
- burned bone trauma

Other areas of interest/research include:

- taphonomical influences of recent, historic and prehistoric skeletons
- biomechanical interpretations of bone trauma
- bony response to trauma, histological and gross
- recognition and interpretation of skeletal trauma in child abuse involving radiology and invasive autopsy

Degrees/Certification/Awards

- Feb 2008-09 Recipient of the 15th T. Dale Stewart Award. A lifetime achievement award recognized by the American Academy of Forensic Sciences, Anthropology Section. The award recognizes enduring contributions to the field of forensic anthropology and a career marked by accurate, detailed scholarship and remarkable productivity
- 2003-2009 Board of Directors, American Board Forensic Anthropology (6 years)
- Jul 2008 Fulbright Scholarship, Lima, Peru
- Feb 1997 Board Certified Diplomate, American Board Forensic Anthropology, Number 57 in North America
- May 1992 PhD-Physical Anthropology Department of Anthropology, University of Tennessee, Knoxville



Professional Experience

2016 to Present Forensic Anthropologist for the State of Mississippi, employed by the Department

2016 Professor Emeritus, Mercyhurst University, Erie, PA. Forensic and Biological Anthropology,

2012 to Present Extraordinary Professor for the University of Pretoria School of Medicine, South Africa

2014 to Present Adjunct professor, University of San Carlos, Guatemala City. Forensic Science master's degree.

Presently On call as outside forensic anthropology consultant with:

Summit County, Ohio (Dr. Lisa Kohler)

Singapore Medical Examiner's Office, Singapore Forensic Medicine Division

(Drs. Paul Chui and George Paul)

Detroit Medical Examiner's Office (Dr. Carl Schmidt),

Polk County Medical Examiner's Office (Dr. Greg Schmunk), Des Moines, IA.

Will County Medical Examiner's Office, Juliette, IL, for disaster plan (2004 to present)

2003-2007 Assistant Professor, Mercyhurst Archaeological Institute, Mercyhurst College, Erie, PA

2004 to Present Consultant to Kenyan International Emergency Services

2004-2011 Adjunct Faculty: Department of Anthropology, University of Tennessee, Knoxville

1987-2004 Forensic Anthropologist, Shelby County Reg. Forensic Center, University of Tennessee, Memphis

2003-2004 Assistant Professor: Forensic Pathology Department and College of Nursing and University of Tennessee, Memphis

1998-2003 Assistant Professor, Department of Pathology, University of Tennessee, Memphis

1993-1998 Instructor, Department of Pathology, University of Tennessee, Memphis

1986-1987 Forensic Anthropologist and Morgue Director for Metropolitan Nashville ME Office

Funding/Support:

2009-11 Grant Award: National Institute of Justice grant 2008-DN-BX-K131. *Recovery and Interpretation of Burned Human Remains*. Awarded to Applied Forensic Sciences Department, Mercyhurst College, Erie, PA. Principal Investigators: Steven A Symes, Dennis C Dirkmaat, Stephen D Ousley, Michael Kenyhercz.

2008 Grant Award: National Institute of Justice, US Department of Justice. Contract Number #2005-IJ-CX-K016. Project Title: "Knife and Saw Toolmark Analysis in Bone: A Manual Designed for the Examination of Criminal Mutilation and Dismemberment". Coauthors Dennis Dirkmaat, Stephen Ousley, Luis Cabo .

2006-08 Grant Award: National Institute of Justice, US Department of Justice, supported by Reference Grant Number: 2005-IJCK016 Continuance. Knife and Saw Tool Mark Analysis in Bone: A Manual Designed for the Examination of Criminal Mutilation and Dismemberment-Phase II. Coauthors: CW Rainwater, EN Chapman, and SMT Myster.

- 2005-10 Grant: National Institute of Justice, US Department of Justice, supported by Award No. 2005-IJ-CX-K016. Knife and Saw Toolmark Analysis in Bone: Research Designed for the Examination and Interpretation of Criminal Mutilation and Dismemberment. Coauthors: AM Kroman and ST Myster.
- 2005 Grant: GIS training at Mercyhurst College. KIZ partnership between the Commonwealth of Pennsylvania and Mercyhurst College. DC Dirkmaat (grant manager), LL Cabo, and SA Symes.
- 2005 Grant: The Forensic Sciences Foundation, American Academy of Forensic Sciences, Lucas Research Grant – A Reassessment of Human Skeletal Trauma Molding and Casting Methodologies: Preserving the Evidence.
- 2005 Grant: Mercyhurst Diversity Grant provides travel money for visiting human rights lecturers.
- 2005 Grant: Mercyhurst Diversity Grant provides travel funding for forensic science students professional meetings.
- 2005 Grant: Mercyhurst College Faculty Research Travel Grant
- 2004 Grant: Mercyhurst College Faculty Research Travel Grant
- 2003-06 Grant: Awarded by the University of Tennessee Law Enforcement Innovation Center, National Forensic Academy. Bone Trauma: A text of fracture biomechanics. Principal investigators: SA Symes and AM Kroman. Additional authors include: R Donaldson.
- 2003-06 Grant: Awarded by the University of Tennessee Law Enforcement Innovation Center, National Forensic Academy. Dismemberment and Mutilation Saw Marks in Bone: Analysis and Interpretation. Principal investigators: SA Symes and AM Kroman. Additional authors include S Myster.

Future Publication

Symes, SA, EN L'Abbé

- 2018 Bone Fracture Interpretation in Anthropology and the Forensic Sciences. Book proposal accepted by Elsevier publishers.

Publications/Proceedings

Carpenter, KA, KA Ihle, SA Symes,

- 2016 Reassessing Blunt Force Trauma to True Rib Heads Utilizing Tension-Compression Theory. Abstract submitted to the 2016 American Academy of Forensic Science.

L'Abbé, EN, Steven A. Symes, M W Kenyhercz, Kyra E. Stull, GC Krüger, Marie-Christine Dussault, L Liebenberg, E Chapman, J Myburgh

- 2016 Reliability of Biomechanical Descriptors to Assess Blunt Force Injuries in the Cranium. Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science. 22:161.

Adserias J., C. Zapico S., Cabo L., Symes S., Ubelaker D., Dirkmaat D.

- 2016 Teeth and Fire: Forensic analysis of teeth and dental material exposed to fire. Abstract submitted to the American Academy of Forensic Science.

L'Abbé EN, Symes SA, Pokines JT, Stull KE, Cabo LL, Kuo S, Randolph-Quinney PS, Raymond DE, Dirks PHGM, Berger LR
2015 Forensic Interpretations of fresh bone fracture patterns on Malapa. Submitted to *Scientific Reports*, SREP-15-16224. www.nature.com/articles/srep15120.

Schmidt, CW, and SA Symes, Eds.
2015 Analysis of Burned Human Remains. Second Edition. Elsevier Press, New York.

Symes, SA, CW Rainwater, EN Chapman, DR Gipson, and AL Piper
2015 Patterned Thermal Destruction of Human Remains. *IN* Analysis of Burned Human Remains 2nd Edition. CW Schmidt and SA Symes, Eds. Elsevier Press, pp. 17-59. New York, NY.

Symes, SA, EN L'Abbé, EN Chapman,
2015 Evaluation of lateral rib fracture injury modes and biomechanics in abused infants. Proceedings: American Academy of Forensic Sciences, 21:**

Hart, GO, SA Symes, RA Mitchell
2015 A Re-examination of Patterns of Abuse in Children. Proceedings: American Academy of Forensic Sciences, 21:

Symes, SA, EN L'Abbé, E Chapman, JES Pinheiro, KE Stull, and D Raymond
2014 The Rorschach Butterfly: The Use of Nomenclature in Lieu of Understanding the Effects and Components of Kinetic Energy in Bone Trauma Interpretations. Proceedings: American Academy of Forensic Sciences 20:419-420.

Milner, GR, SA Symes, and TS Yuzwa
2014 Postmortem Smoothing of Fractured Fresh Bones in Bodies Immersed in Moving Water: Forensic Cases Aid in Trauma Interpretation of an Archaeological Skeleton. Proceedings: American Academy of Forensic Sciences, 20:420-421.

Pinheiro, JES, EN L'Abbé, SA Symes, PhD, E Chapman, and KE Stull
2014 New Approach to the Traditional English classification of Trauma and Bone Implications. Proceedings: American Academy of Forensic Sciences, 20:333-334.

Randolph-Quinney, P, J Pokines, SA Symes, EN L'Abbé, L Backwell, J Brophy, A Parkinson, and L Berger
2014 The Prodigal Child Returns: The Application of Forensic Taphonomic Analyses to Paleoanthropological Assemblages — Case Examples From the Malapa Hominin Deposit. Proceedings: American Academy of Forensic Sciences, 20:483-484.

Pokines, JT and SA Symes, Eds.
2014 Manual of Forensic Taphonomy. Baton Rouge: CRC Press CRC, Baton Rouge.

Symes, SA, EN L'Abbé, KE Stull, M LaCroix, and JT Pokines
2014 Taphonomy and the Timing of Bone Fractures in Trauma Analysis. *In* Manual of Forensic Taphonomy. JT Pokines and SA Symes, Editors. Baton Rouge: CRC Press. Pp. 341-365.

Symes, SA, EN L'Abbé, JT Pokines, T Yuzwa, D Messer, A Stromquist, and N Keough
2014 Thermal Alteration to Bone. *In* Manual of Forensic Taphonomy. JT Pokines and SA Symes, Editors. Baton Rouge: CRC Press CRC Press, Baton Rouge. Pp. 367-402.

Symes SA, L'Abbé EN

2014 Evaluation of rib fractures, injury mechanisms and biomechanics in abused infants less than 18 months old. Proceedings: Anatomical Society of Southern Africa, **

Meyers, PL, S Kuo, JJ Schultz, and SA Symes

2014 An Analysis of Process Signatures to Burn Progression of Human Bodies During Commercial Cremation. Proceedings: American Academy of Forensic Sciences, 20:484.

Symes, SA, EN L'Abbé, KE Stull, I Wolff, and DE Raymond

2013 Basic Principles of Biomechanics for Interpretation of Blunt Force Injuries in Long Bone Trauma in Long Bone. Proceedings: Anatomical Society of Southern Africa 41:68. Durban, South Africa, April 20-24.

Kemp, W, A McKeown, S Symes, and R Skelton

2013 Identification of skeletal fractures before and after removal of soft tissue: a case report. American Journal Forensic Medicine and Pathology. 34(1):18-22.

Debbie Morton Author in Forensic Magazine,

2013 Eight Common Misconceptions Plague Bone and Tool Mark Trauma Analysis. Reprinted From: Knife and Saw Toolmark Analysis in Bone: A Manual Designed for the Examination of Criminal Mutilation and Dismemberment. Research funded by the NIJ, 2005-IJ-CX-K016 by SA Symes, EN Chapman, CW Rainwater, LL Cabo, and SMT Myster, May 31, 201.

Kroman, AM and SA Symes

2013 Investigation of Skeletal Trauma. In Research Methods in Human Skeletal Biology, EA DiGangi and MK Moore Eds. Academic Press, NYC, New York. Pp. 219-239.

Symes, SA, EN L'Abbé, KE Stull, I Wolff, and DE Raymond

2013 A Return to the Basic Principles of Biomechanics to Interpret Blunt Force Trauma in Long Bone. Proceedings: American Academy of 19:409-410.

Symes, SA, EN L'Abbé, EN Chapman, I Wolff, and DC Dirkmaat

2012 Interpreting Traumatic Injury to Bone in Medicolegal Investigations. In A Companion to Forensic Anthropology. DC Dirkmaat, ed. Wiley-Blackwell. Chapter 17:340-389.

Semeraro, D, NV Passalacqua, SA Symes, and T Gilson

2012 Patterns of Trauma Induced by Motorboat and Ferry Propellers as Illustrated by Three Known Cases from Rhode Island. Journal of Forensic Sciences 57(6):1625-1629.

L'Abbé, EN, SA Symes, L Marnewick, PJ Becker, and J Vellema

2012 A prospective study of hyoid fractures in cases of fatal blunt force injuries to the upper body. American Academy of Forensic Sciences 18:397.

L'Abbé, EN, SA Symes, KE Stull, and J Vellema

2012 Suicidal hangings and hyoid bone involvement: are fractures predictable indicators of cause of death? Presented in a workshop entitled Advances in asphyxia by strangulation for pathologists and anthropologists. Proceedings: American Academy of Forensic Sciences 18:23.

Keough, N, K Colman, EN L'Abbé, SA Symes, and L Cabo

2012 Distinguishing features of thermal destruction on fleshed, wet and dry remains. Proceedings: American Academy of Forensic Sciences 18:386.

- Symes, SA and DR Vertes
 2011 Child Abuse vs. Cachexia: Do Healing and Acute Rib Fractures Trump a Diagnosis of Probable Cardiac Dysrhythmia Due to Electrolyte Abnormalities? Proceedings: American Academy of Forensic Sciences, 17:303.
- Fojas, C, CW Rainwater, and SA Symes
 2011 Using spatial analysis to recognize normal and abnormal patterns in burned bodies. Proceedings: American Academy of Forensic Sciences 17:367-368.
- Dirkmaat, DC, SA Symes, and L Cabo
 2010 Forensic archaeological recovery of the victims of the Continental Connection Flight 3407 crash in Clarence center, New York. Proceedings: American Academy of Forensic Sciences, 16: 387.
- Symes, SA. "Saw Mark Manual." *Symesforensics.com*.
 2010 http://www.symesforensics.com/documents/1SawMarkManual_Symes-web.pdf
- Smith, OC, EJ Pope, and SA Symes
 2009 Look until you see: Identification of trauma in skeletal material. IN *Hard Evidence*. Ed. D.W. Steadman, 2nd edition. Prentice Hall. Pp. 190-204.
- Symes, SA
 2009 Two niche areas of death investigation: Sharp-force trauma and burned-bone trauma. *Exclusive Evidence Technology Magazine Interview; Cover Story*. 7(3):14-17.
- Schmidt, CW, and SA Symes, Eds.
 2008 *Analysis of Burned Human Remains*. Elsevier Press, New York.
- Symes, SA, CW Rainwater, EN Chapman, DR Gipson, and AL Piper
 2008 Patterned Thermal Destruction of Human Remains. *IN Analysis of Burned Human Remains*. CW Schmidt and SA Symes, Eds. Elsevier Press, pp. 15-54. New York, NY.
- Overbury, RS, LL Cabo, DC Dirkmaat, and SA Symes
 2008 Asymmetry of the Os Pubis: Implications for the Suchey-Brooks Method. *American Journal of Physical Anthropology***
- Dirkmaat, DC, LL Cabo, SD Ousley, and SA Symes
 2008 New perspectives in forensic anthropology. *Yearbook Phys Anthropol* 51:33-52.
- Symes, SA, CW Rainwater, EN Chapman, DR Gipson, and K Stull
 2008 Recognizing Patterned Fire and Heat Damage to Bone. Proceedings: American Academy of Forensic Sciences, 14: 363-364.
- Cunha, E, JV Badal, A Liryo, J Pinheiro, and SA Symes
 2008 How easily can we derive cause and manner of death on the basis of dry bones? Lessons derived from Coimbra identified skeletal collections. Proceedings: American Academy of Forensic Sciences, 14:370.
- Pinheiro, J, A Lyrio, E Cunha, and SA Symes
 2008 Cranial bone trauma: misleading injuries. *American Academy of Forensic Sciences*, 14:363.

- Symes, SA, FP Saul, and JM Saul
2007 When Experts Disagree: Part II: Can You Have Too Many Experts? Proceedings: American Academy of Forensic Sciences, 13:446.
- Symes, SA, CW Rainwater, and SMT Myster
2007 Standardizing Saw and Knife Mark Analysis on Bone. Proceedings: American Academy of Forensic Sciences, 13:336.
- Sledzik, P.S., SA Symes et al.
2007 *The fourth era of forensic anthropology: examining the future of the discipline*. Proceedings: American Academy of Forensic Sciences, 13:**
- Martrille, L, C Cattaneo, SA Symes, and E Baccino
2007 Bones in Aid of Forensic Pathology: Trauma Isn't Only Skin Deep. Proceedings: American Academy of Forensic Sciences, 13: 335.
- Symes, SA
2007 Future of Trauma Analysis. Presentation to a symposium on the 4th Era of Forensic Anthropology, Proceedings: American Academy of Forensic Sciences, 13:352.
- Symes, SA
2006 From the Case Files of SA Symes, PhD. *IN A Cut Above: Sharpening the Accuracy of Knife and Sawmark Analysis*, DW Morton, Ed. Forensic Magazine 3(3):8-11.
- Symes, SA, AM Kroman, SMT Myster, CW Rainwater, and JJ Matia
2006 Anthropological Saw Mark Analysis on Bone: What is the Potential of Dismemberment Interpretation? Proceedings: American Academy of Forensic Sciences 12:301.
- Devlin, JB, AM Kroman, SA Symes, and NP Herrmann
2006 Heat Intensity vs. Exposure Duration Part I: Macroscopic Influence on Bone. Proceedings: American Academy of Forensic Sciences 12:310-311.
- Symes, SA and AM Kroman, ST Myster, and CW Rainwater
2006 Anthropological Saw Mark Analysis on Bone: What is the Potential of Dismemberment Interpretation? Proceedings: American Academy of Forensic Sciences 12:301.
- Kroman, AM, T Kress, and SA Symes
2005 Mandible and Cranial Base Fractures in Adults: Experimental Testing. Proceedings: American Academy of Forensic Sciences 11:289-290.
- Saul JM, FP Saul, SA Symes, and CW Schmidt
2005 When Experts Disagree: There May Be a Rodent Involved Part I: The Request for a New Trial. Proceedings American Academy of Forensic Sciences 11:296-297.
- Saul, FP, JM Saul, and SA Symes
2005 The Lady in the Box. Proceedings: American Academy of Forensic Sciences 11:300.
- Symes, SA, DC Dirkmaat, JJ Woytash, AM Kroman, CW Rainwater, and AC Wilson
2003 Perimortem Bone Fracture Distinguished From Postmortem Fire Trauma: A Case Study with Mixed Signals. Proceedings: American Academy of Forensic Sciences 11:288-289.

- Love, JC and SA Symes
2003 Understanding Rib Fracture Patterns: Incomplete and Buckle Fractures. *Journal of Forensic Sciences* 49(6):1153-1158.
- Symes, SA, JA Williams, EA Murray, JM Hoffman, TD Holland, J Saul, F Saul, and EJ Pope
2002 Taphonomical Context of Sharp-Force Trauma in Suspected Cases of Human Mutilation and Dismemberment. *In Advances in Forensic Taphonomy: Method, Theory and Archaeological Perspectives*. WD Haglund and MH Sorg, Eds. CRC Press, New York.
- Symes, SA, C Ferraro, SB Patton, OC Smith, and AM Kroman
2002 From Caffey (1946) to Kempe (1962): Historical Perspectives of the Recognition of Child Abuse. *Proceedings: American Academy of Forensic Sciences* 8:246-247.
- Symes, SA, SB Patton, TA Campbell, CD Gardner, OC Smith, TP Sutton, C Mallak, and AM Kroman
2002 Child Abuse: It's all in the Recognition. *Proceedings: American Academy of Forensic Sciences* 8:251-252.
- Ferraro, C, OC Smith, SA Symes, CD Gardner, and TA Campbell
2002 The Child Abuse Works of Ambroise Tardieu ... Had We Only Taken French. *Proceedings: American Academy of Forensic Sciences* 8:209-210.
- Pope, EJ, SA Symes, and OC Smith
2002 Burning Observations of the Head: An Experimental Model. *Proceedings: American Academy of Forensic Sciences* 8:225-226.
- Ferraro, C, OC Smith, SA Symes, CD Gardner, and TA Campbell
2002 Coming of Age in Memphis . . . How Our Children Die. *Proceedings: American Academy of Forensic Sciences* 8:210-211.
- Saul, FP, JM Saul, S Anderson, SA Symes, CL Loewe, JR Patrick, and SK Lorch
2002 Homicide for the Holidays: Linkage Through Multidisciplinary Teamwork. *Proceedings: American Academy of Forensic Sciences* 8:220.
- Patton, SB, SA Symes, OC Smith, TA Campbell, and CD Gardner
2002 Diagnostic Imaging of Child Abuse: A Comparison of Radiographic Views to Detect Rib Fracture. *Proceedings: American Academy of Forensic Sciences* 8:247-248.
- Smith, OC, SA Symes, CD Gardner, TA Campbell, SB Patton, and C Ferraro
2002 Abuse Autopsy Techniques: What Works for Us. *Proceedings: American Academy of Forensic Sciences* 8:211-212.
- Kroman, AM, SA Symes, OC Smith, JC Love, HH Mincer, and JW Lemmon
2002 The Hidden Truth: Mandibular Condyle Fractures in Child Abuse. *Proceedings: American Academy of Forensic Sciences* 8:250.
- Dirkmaat, DC, SA Symes, E Vey, and OC Smith
2002 Recognizing Child Abuse in the Thoracic Region through a Multidisciplinary Approach. *Proceedings of the American Academy of Forensic Sciences* 8:248-249.

Waldrip, EB, TA Rathbun, and SA Symes

2002 Human Skeleton in a Chimney: A Misidentification Corrected and an Opportunity to Reevaluate Methods of Superimposition. *Proceedings: American Academy of Forensic Sciences* 8:242-243.

Williamson, MA, CA Johnston, SA Symes, and JJ Schultz

2002 Ambush at Ft. Laurens: Interpersonal Conflict between Colonial Period Native Americans and Europeans I Ohio. Paper accepted for publication in the *American Association of Physical Anthropology*.**

Pope, EJ, SA Symes, and OC Smith

2002 Burning Observations of the Head: An Experimental Model. *Proceedings: American Academy of Forensic Sciences* 8:225-226.

Gunther, WM, SA Symes, and HE Berryman

2000 Characteristics of Child Abuse by Anteroposterior Manual Compression versus Cardiopulmonary Resuscitation: Three Case Reports. *American Journal of Forensic Medicine and Pathology* 21(1): 5-10.

Galloway, A, SA Symes, WD Haglund, and DL France

1999 The Role of Forensic Anthropology in Trauma Analysis. *IN Broken Bones*. A Galloway, Ed. C. C. Thomas, Springfield, IL: 5-31.

Symes, SA, OC Smith, CD Gardner, JT Francisco, and GA Horton

1999 Anthropological and Pathological Analyses of Sharp Trauma in Autopsy. *Proceedings: American Academy of Forensic Sciences* 5:177-178.

Gardner, CD, H Mincer, OC Smith, and SA Symes

1999 Application of Epiluminescence Microscopy (ELM) to the Evaluation of Bite Marks. *Proceedings: American Academy of Forensic Sciences* 5:139-140.

Smith, OC, SA Symes, and J Fraser

1999 An Engineering Approach to Aircraft Mishap Autopsies. *Proceedings: American Academy of Forensic Sciences* 5:199.

Murray, E, and SA Symes

1998 Bony Trauma Inflicted on a Human Skull in an Attempt to Preclude Identification. *Proceedings: American Academy of Forensic Sciences* 5:209-210.

Symes, SA, and OC Smith

1998 It Takes Two: Combining Disciplines of Pathology and Physical Anthropology to Get the Rest of the Story. *Proceedings: American Academy of Forensic Sciences* 4:208.

Smith, OC, SA Symes, and CD Gardner

1998 Application of Epiluminescence Microscopy (ELM) to Forensic Pathology. *Proceedings: American Academy of Forensic Sciences* 4:158-159.

Smith, OC, SP Steel, and SA Symes

1998 Detection and Identification of Metallic Bullet Residues in Skeletal Trauma. *Proceedings: American Academy of Forensic Sciences* 4:168.

- Symes, SA, HE Berryman, and OC Smith
1998 Saw Marks in Bone: Introduction and Examination of Residual Kerf Contour. *IN* Forensic Osteology II, Advances in the Identification of Human Remains. KJ Reichs, Ed. Pages 333-352. CC Thomas, Springfield, IL.
- Francisco, JT, HE Berryman, and SA Symes
1998 Recovery and Analysis of Fragmented Remains: The West Tennessee Approach. Paper presented in the Anthropology and Pathology/Biology Multidisciplinary Session. Proceedings: American Academy of Forensic Sciences 4:143.
- Murray, E, and SA Symes
1998 Bony Trauma Inflicted on a Human Skull in an Attempt to Preclude Identification. Proceedings: American Academy of Forensic Sciences 4:209-210.
- Berryman, HE, and SA Symes
1998 Recognizing Gunshot and Blunt Cranial Trauma through Fracture Interpretation. *IN* Forensic Osteology II, Advances in the Identification of Human Remains. KJ Reichs, Ed. C.C. Thomas, Springfield, IL.
- Berryman, HE, WA Bass, SA Symes, and OC Smith
1997 Recognition of Cemetery Remains in the Forensic Setting. Chapter in Forensic Taphonomy: The Post-Mortem Fate of Human Remains, WD Haglund and MH Sorg, Eds. CRC Press, New York.
- Smith, OC, SA Symes, and TD Henderson
1997 Torture and Testimony in Criminal Homicides: Recognition and Application. Proceedings: American Academy of Forensic Sciences 3:128-129.
- Sutton, TP, OC Smith, BL Stacks, SA Symes, and TA Deering
1997 Firing Sequence in a Homicide-Suicide: Who Shot Whom? Proceedings: American Academy of Forensic Sciences 3:14.
- Berryman, HE, SA Symes, and JT Francisco
1996 Yellow Jack, the Saffron Scourge: A Review of the 1878 Yellow Fever Epidemic in Memphis. Paper presented to the Last Word Society. Proceedings: American Academy of Forensic Sciences 2:229.
- Smith, OC, SA Symes, HE Berryman, and MM LeVaughn
1996 Characteristic Features of Entrance Wounds from Hollow-Point Bullets. *Journal of Forensic Sciences* 38(2):323-326.
- Berryman, HE, OC Smith, and SA Symes
1995 Diameter of Cranial Gunshot Wounds as a Function of Bullet Caliber. *Journal of Forensic Sciences* 40(5):751-754.
- Berryman, HE, OC Smith, SJ Haun, and SA Symes
1995 The Effects of Metal-jacketed and Hollow-point Bullets on Entrance Defect Diameter in Cranial Bone. Proceedings: American Academy of Forensic Sciences 2:149-150.
- Smith, OC, Lee Jantz, HE Berryman, and SA Symes
1993 Effects of Human Decomposition on Bullet Striations. *Journal of Forensic Sciences* 38(3):593-598.
- Smith, OC, L Jantz, HE Berryman, SA Symes, and MM LaVaughn
1993 Identification of Gunpowder in Healed Wounds. *Journal of Forensic Sciences* 38(3):739-741.

- Smith, OC, HE Berryman, and SA Symes
 1993 The Meaning of Accessory Projectile. *Journal of Forensic Sciences* 38(2):484-488.
- Smith, OC, HE Berryman, SA Symes, JT Francisco, and V Hnilica
 1993 Atypical Gunshot Exit Defects to the Cranial Vault. *Journal of Forensic Sciences* 38(2):339-343.
- Symes, SA
 1992 Morphology of Saw Marks in Human Bone: Identification of Class Characteristics. PhD Dissertation, Department of Anthropology, University of Tennessee, Knoxville.
- Berryman, HE, WM Bass, SA Symes, and OC Smith
 1991 Recognition of Cemetery Remains in the Forensic Setting. *Journal of Forensic Sciences* 36(1): 230-237.
- Smith, OC, HE Berryman, SA Symes, and L Meadows
 1990 Detrimental Effects of Cleansing or Sterilizing on Bullet Striations, *Association of Firearm and Tool Mark Examiners Journal* 22(2):129-135.
- Mann, RW, WM Bass, and SA Symes
 1987 Maxillary Suture Obliteration: Aging the Human Skeleton Based on Intact or Fragmentary Maxilla. *Journal of Forensic Sciences* 32:148-157.
- Symes, SA
 1983 Harris Lines as Indicators of Stress: An Analysis of Tibiae from Crow Creek Massacre Victims. Master's Thesis, Department of Anthropology, University of Tennessee, Knoxville.
- Boyd, CC Jr., PA Driscoll, and SA Symes
 1983 Analysis of the Skeletal Remains from the Brown Site (40MU260), Maury County. *Tennessee Anthropologist* 8:50-66.
- Owsley, DW, and SA Symes
 1983 Morphological Differences between Mandan and Historic Arikara Crania. *Plains Anthropologist* 26:49-56.
- International Scholarship:**
Invited Instruction, International Seminars and Case Work
- 2017 Extraordinary Professor: Department of Anatomy, at the University of Pretoria, South Africa.
- 2017 Continued consulting with prof Erica L'Abbè on forensic anthropology trauma cases.
- 2015 Specialized Bone Trauma Class. Sponsored by EAAF (Argentina Forensic Anthropology Team) Ivana Wolf, for the Central Institute of Forensic Science, Bangkok, Thailand June 6-12.

- 2012-15 Annual School on Forensic Sciences and Human Rights in Africa sponsored by the ambassador from Argentina, and the Argentina Forensic Anthropology Team (EAAF) in partnership with Witwatersrand University, in Johannesburg. (approx. 15 participants and 10 countries represented yearly)
- 2014-15 Forensic Instructor for the Chilean Medicolegal Institute. One to three day seminars on bone trauma for the professional staff. Santiago, Chile.
- 2014 One day lecture and laboratory on bone trauma for the Annual Congreso Latino Americano de Antropología Forense, Santiago, Chile. (Approx. 100 attend)
- 2013-14 Instructor for the Biannual Pennsylvania coroner's course. Hershey, PA. 20-21 Apr and 5-7 Dec 2013. (approx. 20-25 participating)
- 2013 Bernard Price Institute: University of Witwatersrand, South Africa. Analysis of potential bone fracture in Malapa Hominin 1 and 2 (*A. sediba*): Examinations of the fossils occurred in April, August, and November,
- 2013 Basic principles of biomechanics to interpret blunt force trauma in long bones. ASSA (Anatomical Society of Southern Africa), 20-24 April, 2013. Durban, South Africa. (approx. 30 participating)
- 2011-13 Third annual remains recovery class for law enforcement. 9-11 July 13 in Sioux Falls. (approx. 20 attend)
- 2013 Lecture to University of San Carlos, Guatemala City (2nd anual). Forensic Science masters class in 23 Oct.
- 2013 Three-day workshop on Trauma Analysis for the Guatemala forensic anthropology team (FAFG), including topics of blunt biomechanics, gunshot, and burned. (approx. 35 participating)
- 2013 Half day Seminar lecturer for Nebraska Criminal Defense Attorneys Association, Lincoln, NE. 8-10 Nov. Topic-Recognition of Child Abuse. (approx. 60 participating)
- 2013 Forensic Instructor with Dr. Garvin for the special training session for the Encargada Unidad Especial de Identificación Forense, Santiago Chile. Four days of lecturing to their national forensic team. Marisol Intriago Leiva, director of the Encargada Unidad Especial de Identificación Forense, Servicio Médico Legal.
- 2012-Present Four week Seminar: African Network of Forensic Pathologists. Claudia Bisso, coordinator for South African Government and the Argentina Forensic Anthropology Team.
- 2012-Present FAFG (Fundación de Antropología Forense de Guatemala) Invited Instructor: laboratory analysis of bone trauma and burned bone, Guatemala City with visitation to various human rights sites across the country.
- 2012 Department of Anatomy. University of Pretoria. One Week Short course on blunt force injuries to bone to postgraduate students, forensic pathologists and professional anthropologists from the Depts of Forensic Pathology and Anatomy at the University of Pretoria and Witwatersrand University, With Dr. Joao Pinheiro. Aug 27-31.
- 2012 FAFG (Fundación de Antropología Forense de Guatemala) Invited Instructor: Training of the team on laboratory analysis of bone trauma, Guatemala City Oct 29-30.
- 2012 Medical School of the University of Witwatersrand. General student Forensic Anthropology lecture, Sep 2.

- 2012 ALAF (Latin American Forensic Anthropology Congress) Antigua, Guatemala Oct 22-27.
Invited Instruction, includes:
Oct 23 Indicators of perimortem Bone Trauma. Lecture to the congress
Oct 27 Advanced Trauma/Toolmarks Workshop.
- 2012 Department of Anatomy. University of Pretoria. Seminar presentation on blunt force injuries to bone to postgraduate students, forensic pathologists and professional anthropologists from the Departments of Forensic Pathology and Anatomy at the University of Pretoria and Witwatersrand University. Apr 10-12.
- 2011 Argentine Forensic Anthropology Team (EAAF) requested an examination of burned human remains. Examination occurred in Buenos Aires with EAAF team members. Jul 15-25.
•Lecture to faculty/students of Archaeology at the National Archaeological Inst. in Buenos Aires on Jul 19.
•On Jul 21 lectured to members of the Uruguay's Forensic Team and the Forensic Archaeology Investigation Group, GIAF (Spanish acronym) on bone trauma and burned bone trauma.
- 2011 Invited Guest Speaker at a paper at the a Human Rights Conference entitled "Reclaiming stolen lives: Forensic sciences and human rights investigations" in Johannesburg, South Africa from 31 Oct to 4 Nov 2011. The congress comprised of 14 countries from Africa and approximately 30 Participants. University of Pretoria. Topics include bone trauma and burned bone analysis.
- 2011 Argentine Forensic Anthropology Team (EAAF) (Spanish acronym) requested an examination of burned human remains. Examination occurred in Buenos Aires with EAAF team members. Jul 15-25. Lectured to professors and students of Archaeology at the National Archaeological Institute in Buenos Aires on Jul Group, GIAF (Spanish acronym) on bone trauma. Jul 15-25.
- 2011 University of Pretoria. Assisted Ms. Colman on a BSc Hons in Physical Anthropology research project on distinguishing features of thermal destruction on fleshed, wet.
- 2011 University of Pretoria. Assisted in protocol design and analysis of burned remains for N. Keough, PhD Anatomy, project on evaluating postmortem burn patterns variation using pig carcasses.
- 2010 The United Nations Development Program in Colombia sponsored a one week class in the Medicolegal institute of Bogotá on bone trauma and burned bone analysis.. Dec 13-18.
- 2010 ALAF (Latin American Forensic Anthropology) Meetings in Manizales, Colombia.
Invited Instruction, includes:
Oct 26 General taphonomy lecture to the congress
Oct 28 General trauma and burned bone analysis lecture to the congress
Oct 29 Advanced trauma/toolmarks Workshop
Oct 30 Trauma Analysis for students
- 2010 Three 1-day seminar sessions held at the Johannesburg medical examiner Office and Department of health. Half day morgue seminars examining autopsies and traumatized bodies. Afternoons were spent in lecture on various topics from postcranial ballistics, burned bodies, recognition of child abuse, and sharp force trauma interpretation Aug 13-18. (35)
- 2010 Examination of University of Pretoria forensic cases. Cases that Professor Ericka L'Abbe has acquired in the last year and would like a second opinion, Aug 6-12.

- 2010 Examination of Two burned cases for the Missing Persons Task Team, National Prosecuting Authority, with Claudia Bisso, South Africa Aug 22.
- 2010 Instructor for the Argentina Forensic Anthropology team (Equipo Argentino de Antropología Forense). Topics included bone trauma analysis and burned bone analysis training for the team and participants of human rights work from Uruguay and Argentina. Apr 26- 30. (15)
- 2010 Invited lecturer for a 4 day bone trauma seminar for the Servicio Medico Legal and the University of Chili anthropology students. Sponsored by Alejandra Jimenez Mora, Coordinator for the Human Rights Program, Ministry of Justice of Chile, Santiago. This included a day of case examination for the Ministry of Justice. May 1-4 (40)
- 2009 Invited to teach a 5 day perimortem trauma and burned bone workshop in Guatemala City for Freddy Peccerelli and the Guatemalan Forensic Anthropology Foundation (FAFG).
- 2009 Instructor for ICITAP, a US government agency assisting in forensic training for local professionals, Bogotá, Colombia. Topics included bone trauma and burned bone analysis. Jul (30)
- 2009 Examined potential human rights atrocity victims for Equatas, Medellin, Colombia. Discussed issues of bone trauma and burned bone analysis. Jul (6)
- 2009 One week long stay in Pretoria, South Africa, examining burn cases and touring Medical Examiner's office in Johannesburg, South Africa. Did a 1 day lecture to forensic pathologists. August (25)
- 2009 One week in Cape Town, attending the International congress of Anatomy, South Africa. August
- 2009 One week long trauma class at University Pretoria, attendees from all major universities in South Africa. August. (50)
- 2008 Invited to Singapore as visiting expert lecturer for Health Manpower Development Plan. The trip was funded by the Ministry of Health of Singapore and I was sponsored by Dr. George Paul, Senior Consultant, Forensic Pathologist, and branch director of Forensic Medicine Operations. Dr. Paul Chui, Divisional Director – Forensic Medicine Division & Group Director- ASG. Also lectured to the Singapore Police CID. Topics included bone trauma and burned bone analysis.
- 2008 Invited Lecturer, University of Pretoria. Lectures given on bone trauma analysis and sharp force trauma. Two presentations given to local anthropology classes and international human rights workers at the University of Cape Town. Also examined remains from the Mamalodi 10 and the suspected remains of the Pebco Three, recovered by the task team at Post Chalmers in the Eastern Cape. Cases involved perimortem trauma and
- 2008 Funded as a Fulbright Senior Scholar for two weeks in Lima, Peru, Fulbright Specialist project #2892, anthropology, Peru. Instructor, Master's Program in Forensic Anthropology and Bioarchaeology at Pontificia Universidad Catolica del Peru. Initiative of the Instituto de Democracia y Derechos Humanos. One week in Lima. Also one week in Ayacucho, Peru, to examine human rights victims for the Ministerio Publico, Peru. Each venue received topics on the recognition of bone trauma and the interpretation of burned bone trauma.
- 2008 Annual FACE (Forensic Anthropology Society of Europe) International Academy of Legal Medicine, Workshop on Bone Trauma: for Annual Meeting, September. Sponsored by Dr Eric Baccino, France.

- 2007 Training Seminar for Cyprus human rights team. Invited Lecturer and consultant with the (*Equipo Argentino de Antropología Forense*, or "EAAF"). Topics included the analysis of broken and burned bone trauma.
- 2007 Annual FACE (Forensic Anthropology Society of Europe), a section of the International Academy of Legal Medicine, Key Note speaker for annual Laboratory Meeting, Jul. Topics included burned bone and perimortem trauma analysis. Sponsored by Eric Baccino, Eugenia Cunha, and Joao Pinheiro, in Coimbra, Portugal.
- 2006 Worked with the Argentina Forensic Anthropology Team (*Equipo Argentino de Antropología Forense*, or "EAAF"), in Juarez Mexico for one week, in cooperation with the Mexican government, attempting to assist with missing and unidentified young female victims. Examined 17 cases-March.
- 2005 Worked with the human rights personnel on the analysis of cases at the Medico Legal Institute and the Law Enforcement Training Academy of Chile. August 29- September 2. With DC Dirkmaat, LL Cabo, and AM Kroman.
- 2004 Analysis of Burned Bone: Looking for More. Paper presented to the 2nd ALAF, the Latino-American Forensic Anthropology Association. Antigua, Guatemala. With AM Kroman, CW Rainwater, AC Wilson, and LL Cabo.
- 2004 Bone Trauma Seminar. One-week bone trauma and burned bone analysis seminar presented to the Guatemalan Human Rights Team in Guatemala City (FAFG). With L Cabo, and AM Kroman
- 2004 Invited speaker and seminar leader for the Second ALAF, the Latino Forensic Anthropology Association, in Antigua, Guatemala. Gave an afternoon seminar on the Analysis of Traumatized and Burned Bone.
- 2004 Accompanied Dr. Lori Baker to Chihuahua, MEX, as part of an international team to exhume and analyze a high profile case involving the disappearance and eventual assumed recovery of a 16 year old female. Sponsored by AAID.
- 2003 Televideo lecture on traumatized bone. Presented for Andres Patino, of the Colombia Forensic Anthropology team, Universidad de los Andes, annual forensic conference in Bogotá, Colombia. (60)
- 2003 At the request of the United Nations Mission in Kosovo (UNMIK) and Office on Missing Persons and Forensics, I was asked to visit Pristina, Kosovo to examine human rights victims and lecture to local pathologists as part of their training on traumatized bone, With Jose Pablo Baraybar.
- 2003 Instructor on traumatized bone class, in Jakarta, Indonesia. Class organized by the Argentina Forensic Anthropology Team, where local experts train in the science of recovery and analysis of human rights victims. (25)
- 2001 Traveled to San Salvador for one week training of local experts. Worked with the Argentina Forensic Anthropology Team (EAAF), Mimi Doretti.
- 2000 Traveled to Lima, Peru, for one week training of local prosecutors. Worked with the Peruvian Forensic Anthropology Team, Jose Pablo Baraybar
- 1995 Testified in the Paul Bernardo and Karla Homolka serial abduction and homicide case. Toronto, CAN.

Presentations

Symes, SA, EN Chapman, TA. Murad, EJ. Bartelink, and AM. Kroman

2009 Burned Bone Analysis with Implications of Peri- and Postmortem Bone Trauma Assessments Paper presented to the National Association of Medical Examiners, San Francisco. October.

Dirkmaat, DC, SA Symes, and LL. Cabo

2009 Forensic Archaeological Documentation and Recovery of the Victims of the Continental Flight 3407 Crash in Clarence, New York. Paper presented to the National Association of Medical Examiners, San Francisco. October.

Symes, SA

2009 Broken bones, bites, taphonomy, and tool marks: Getting more from traumatized bones. Presented to the Annual Bite Mark Breakfast, American Academy of Forensic Sciences, 15:25.

Symes, SA, EN Chapman, CW Rainwater, SM Thurston Myster

2008 Saw Mark Dismemberment: Simply Another Tool. Abstract presented to the National Institute of Justice, Office of Science and Technology, Investigative and Forensic Sciences Division, General Forensics R&D Grantees Meeting. American Association of Forensic Sciences, Washington DC, Feb 19.

Saul, JM, FP Saul, SA Symes, and CJ Schmidt

2008 When Experts Disagree: There May be Too Many "Experts" - and a Rodent Involved. Forensic Science Society. South Normanton, Derbyshire, UK.

Cunha, E, S Codinha, A Santos, F Costa Santos, L Eira, J Costa Santos, and S Symes

2008 A forensic anthropology case of dismemberment. Presented to the Annual FACE (Forensic Anthropology Society of Europe), a section of the International Academy of Legal Medicine, September, Edinbough, UK.

Symes, SA, EN Chapman, CW Rainwater, SM Thurston Myster

2008 Saw Mark Dismemberment: Simply Another Tool. Abstract presented to the National Institute of Justice, Office of Science and Technology, Investigative and Forensic Sciences Division, General Forensics R&D Grantees Meeting. American Association of Forensic Sciences, Washington DC, Feb 19.

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Cunha, E, S Codinha, A Santos, F Costa Santos, L Eira, J Costa Santos, and S Symes

2008 A forensic anthropology case of dismemberment. Presented to the Annual FACE (Forensic Anthropology Society of Europe), a section of the International Academy of Legal Medicine, September, Edinbough, UK.

Symes, SA, BP Levy, SMT Myster, EN Chapman, CW Rainwater

2007 Saw Mark Analysis On Human Bone: A Problematic yet Revealing Dismemberment Interpretation. Paper presented to the National Association of Medical Examiners, Savannah, GA. October 15.

Symes, SA

2007 Bone trauma paper presented at the spring conference of the New York State Association of County Coroners and Medical Examiners, Verona, NY. March 30-Apr 1.

Symes, SA

2007 Bone Trauma in a Medical Examiner Setting: Recognizing Forensic Toolmarks and Fracture Patterns in Bone. Paper presented to the 24th Annual Minnesota Forensic Science Seminar, Minneapolis, MN. October 2-3.

Rainwater, CW, LL Cabo, and SA Symes

2006 Body Mass Estimation and Personal Identification. Paper presented to the 76th American Association of Physical Anthropologists, Philadelphia, PA. March 21-24.

Symes, SA, DC Dirkmaat, CW Rainwater, JJ Matia, and JM Paoello

2006 Blunt Trauma to the Skull as an Indicator of Manner of Death. Paper presented at the Annual Mountain, Swamp, & Beach Meeting, Radford, VA. September 2.

Symes, SA, CW Rainwater, SMT Myster, and JJ Matia

2006 Toolmark Analysis of Knife and Saw Dismemberment. Paper presented at the 91st International Education Conference of the International Association for Identification, Boston, MA. Jul 2-7.

Symes, SA, CW Rainwater, SMT Myster, JJ Matia, and AM Kroman

2006 Knife and Saw Toolmark Analysis in Bone: Research Designed for the Examination and Interpretation of Criminal Mutilation and Dismemberment. Paper presented to the National Institute of Justice, Office of Science and Technology, Investigative and Forensic Sciences Division, General Forensic Research and Development Grantees Meeting, Boston, MA. Jul 3.

Symes, SA

2006 Introduction to Bone Trauma. Presentation to the Human Identification in Forensic Anthropology short course. Organizers: J Hefner and L Jantz, Knoxville, TN. Jul 31-August 4.

Symes, SA

2006 Anthropological Analysis of Trauma: What the Bones Can Tell Us. Guest lecturer for the Medicolegal Investigation of Death Conference, Dearborn, MI. Apr 26-28.

Symes, SA

2006 Forensic Collection and Recovery of Human Remains. Lecture sponsored by the Ontario Police College and University of Windsor, Alymer, Ontario. June 5-9.

Symes, SA

2006 Forensic Collection and Recovery of Human Remains. One day Lecture sponsored by the Office of the Fire Marshalls, Province of Ontario, Ministry of Community Safety and Correctional Service, Midhurst, ON

Symes, SA

2006 Forensic Anthropology and Thermal Destruction of Bone. Two-day lecture offered to the Office of Fire Marshalls, Ministry of Community Safety and Correctional Services, Midhurst, Ontario. May 30-31.

Symes, SA, CW Rainwater, SMT Myster, and JJ Matia

2006 Knife and Saw Toolmark Analysis in Bone: Research Designed for the Examination and Interpretation of Criminal Mutilation and Dismemberment. Abstract presented to the National Institute of Justice, Office of Science and Technology, Investigative and Forensic Sciences Division, General Forensics R&D Grantees Meeting. International Association of Identification, Boston, MA. Jul 3.

Symes, SA, CW Rainwater, JJ Matia, JM Paoello, and EL Vey 2006 Blunt Trauma to the Skull: What would you call it? Presentation to the 25th Annual meeting of North East Forensic Anthropology Association, Mercyhurst College, Erie, PA.

Symes, SA, CW Rainwater, SMT Myster, and JJ Matia
2006 Toolmark Analysis of Knife and Saw Dismemberment. Paper presented to the International Association of Identification, Boston, MA. Jul 4.

Symes, SA, DC Dirkmaat, CW Rainwater, JJ Matia, JM Paoello, and EL Vey
2006 Blunt Trauma to the Skull as an Indicator of Manner of Death. Presentation to the Mountain, Swamp & Beach Regional Forensic Association Meeting, Radford University, Radford, VA.

Passalacqua, NV, EN Chapman, LL Cabo, S Webb, SA Symes, and DC Dirkmaat
2005 Is it Possible to Individualize Dismemberment? Paper presented at 21st annual meeting of North East Forensic Anthropology Association (NEFAA) College Park, MD. November 5.

Paoello, JM and CW Rainwater, SA Symes, LL Cabo, and DC Dirkmaat
2005 A Dismemberment Dilemma. Paper presented at the 21st Northeast Forensic Anthropologist Association, College Park, MD. November 5.

Symes, SA, JM Paoello, and CW Rainwater
2005 Dismemberment and Defleshing Techniques: Sharp Trauma Analysis. Presented at the 21st annual meeting Northeast Forensic Anthropologist Association, College Park, MD. November 5.

Schmidt, CW, and SA Symes
2005 Poster Symposium titled Beyond Recognition: The Analysis of Burned Human Remains. Poster presented American Association of Physical Anthropology, Milwaukee, WI.

Symes, SA, AM Kroman, CW Rainwater, and AL Piper (Co-organizer)
2005 Bone Biomechanical Considerations in Perimortem vs. Postmortem Thermal Bone Fractures: Fracture Analyses on Victims of Suspicious Fire Scenes. Poster presented at the American Association of Physical Anthropology, Milwaukee, WI.

Symes, SA
2003 Power Saw Dismemberment in an Attempt to Hide a Body. Paper presented to the Northeast Forensic Anthropology Association, New York, NY.

Symes, SA
2003 Cut Mark Analysis of a Power Saw Dismemberment. Paper presented to the annual Mountain, Swamp, Beach Practicing Anthropologists meeting, Chattanooga, TN.

Symes, SA
2000 Analysis of Sharp Force Trauma in Autopsy. Paper presented at the Forensic Pathology Specialty Conference for the U.S. and Canadian Academy of Pathology, New Orleans, LA.

Johnston, CA, and SA Symes
2000 Studies in Hopewell Cremation Practices: The Raymond Ater Mound. Paper presented to annual BARFAA meeting, Columbia, MO.

- Kroman, AM, SA Symes, and DW Frayer
2000 Another Stab in the Dark: A Re-evaluation of Sharp Trauma. Paper presented BARFAA meeting, Columbia, MO.
- Williamson, MA, CA Johnston, SA Symes, and JJ Schultz
2000 Ambush at Ft. Laurens: Interpersonal Conflict between Colonial Period Native Americans and Europeans in Ohio. Paper submitted for presentation to the American Association of Physical Anthropology.
- Symes, SA, OC Smith, HE Berryman, and E Pope
1999 Patterned Thermal Destruction of Human Remains. Paper presented to the 30th Anniversary Edition of the T. D. Stewart Personal Identification in Mass Disasters. Sponsored by the Central Identification Laboratory, Hawaii, and Smithsonian Institution.
- Berryman, HE, and SA Symes
1999 Differentiating Perimortem from Postmortem Fractures in Bone. Paper presented to the 30th Anniversary Edition of the T. D. Stewart Personal Identification in Mass Disasters. Sponsored by the Central Identification Laboratory, Hawaii, and the Smithsonian Institution.
- Symes, SA, OC Smith, and HE Berryman
1999 Burned Bone: Looking a Little Closer. Paper presented to the 13th annual Mountain, Swamp and Beach Meeting of Practicing Forensic Anthropologists, Columbia, SC.
- Johnson, CA, M Williamson, SA Symes, and J Schultz
1998 Trauma in Colonial Period Military Personnel: The Fort Laurens, Ohio, Skeletal Sample. Paper presented to the Ohio Archaeological Council, Toledo, OH. October 9.
- Symes, SA, HE Berryman, and OC Smith
1997 Different Aspects of Sharp Trauma Analysis: Working with Forensic Pathologists. Paper presented to the Annual Mountain, Swamp, and Beach Meeting of Practicing Forensic Anthropologists. Chattanooga, TN.
- Berryman, HE, OC Smith, and SA Symes
1994 Cranial Gunshot Entrance Wound Diameter as a Function of Bullet Caliber. Paper presented to the American Academy of Forensic Sciences, San Antonio, TX.
- Symes, SA, HE Berryman, and OC Smith
1994 Large Carnivore Scavenging on Bone: Separating Taphonomic Features from Perimortem Fractures of Bone. Paper presented to the American Academy of Forensic Sciences, San Antonio, TX.
- Symes, SA
1994 Forensic Anthropology: What is the State of the Art (Science)? Paper presented to the 4th annual Western Kentucky Regional Forensic Science Conference, Madisonville, KY.
- Symes, SA, HE Berryman, OC Smith, and C Blake
1992 Saw Dismemberment of Human Bone: Characteristics Indicative of Saw Class and Type. Paper presented to the 44th American Academy of Forensic Sciences, New Orleans, LA.
- Berryman, HE, H Mincer, SA Symes, OC Smith, and SJ Moore
1992 The Length of Perimortem Internal in Dental Fracture. Paper presented to the 44th American Academy of Forensic Sciences, New Orleans, LA

- Smith, OC, HE Berryman, SA Symes, and SJ Moore
1991 Bone Fracture I: The Physics of Fractures. Paper presented to the 43rd American Academy of Forensic Sciences, Anaheim, CA.
- Berryman, HE, SA Symes, OC Smith, and SJ Moore
1991 Bone Fracture II: Gross Examination of Fractures. Paper presented to the 43rd American Academy of Forensic Sciences, Anaheim, CA.
- Symes, SA, OC Smith, HE Berryman, and SJ Moore
1991 Bone Fracture III: Microscopic Fracture Analysis of Bone. Paper presented to the 43rd American Academy of Forensic Sciences, Anaheim, CA.
- Symes, SA, CH Lahren, and FK King, Jr.
1990 Saw Dismemberment: A Slice of Life. Paper presented to the 42nd American Academy of Forensic Sciences, Cincinnati, OH.
- Berryman, HE, OC Smith, and SA Symes
1990 Biomechanics of Fracture Production. Paper presented to the 42nd American Academy of Forensic Sciences, Cincinnati, OH.
- Smith, OC, HE Berryman, and SA Symes
1990 Changing Role for the Forensic Anthropologist. Paper presented to the 42nd annual meeting of the American Academy of Forensic Sciences, Cincinnati, OH.
- Symes, SA, and HE Berryman
1989 Dismemberment and Mutilation: General Saw Type Determination from Cut Surfaces of Bone. Paper presented to the 41st American Academy of Forensic Sciences, Las Vegas, NV.
- Symes, SA, MG Guilbeau, A B Falsetti, CW Harlan, and L Hutton
1988 Saw Marks On Bone: The Cutting Edge. Paper presented to the spring meeting of the Southern Association of Forensic Scientists, Memphis, TN.
- Symes, SA, MG Guilbeau, AB Falsetti, and CW Harlan
1988 Saw Marks on Bone: Any Way You Cut It. Paper presented to the 40th American Academy of Forensic Sciences, San Diego, CA.
- Mann, RW, and SA Symes
1988 Skeletal Age Estimation by Maxillary Suture Obliteration. Paper presented to the spring meeting of the Southern Association of Forensic Scientists, Memphis, TN.
- Meadows, L, WM Bass, SA Symes
1988 Embalmed Body Decomposition: Above Ground? Paper presented to the spring meeting of the Southern Association of Forensic Scientists, Memphis, TN.
- Hutton, L, and SA Symes
1988 Simplicity of Femur Head Removal for a Musculoskeletal Aspect of Autopsies. Paper presented to the spring meeting of the Southern Association of Forensic Scientists, Memphis, TN.

Symes, SA
1985 Bone Histological Aging in Human Identification Cases. Paper presented to the National Association of Medical Examiners, Memphis, TN.

Symes, SA
1984 Race and Sex Discrimination of Tibiae. Paper presented to the American Academy of Forensic Sciences, Anaheim, CA.

Symes, SA
1983 The Utility of Harris Lines in Paleopathological Analysis of Human Bone. Paper presented to the First Plains Conference Symposium on Paleopathological Plains Conference, Rapid City, SD.

Symes, SA
1983 Discriminant Function Sexing of the Tibia. Paper presented to the American Academy of Forensic Sciences, Cincinnati, OH.

Professional Societies

- Diplomate, American Board of Forensic Anthropology
- Director, American Board of Forensic Anthropology 2003-2008
- Fellow member, American Academy of Forensic Sciences
- Member, Sigma Xi, Scientific Research Society of North America
- Member, American Association of Physical Anthropologists
- Member NEFAA, Practicing Forensic Anthropologists Society

Additional Formal Teaching/Lecture Endeavors (Title; Hours Credit/CEU; Location; Number of Participants [#])

Note: An addendum listing specific lectures by year is available upon request

2008-2016 Associate professor for Mercyhurst University, and the Mercyhurst Archaeological Institute, Erie, PA.

2002- Yearly Instructor for Mercyhurst Archaeological Institute Short Courses. With DC Dirkmaat and LL Cabo, Mercyhurst College: *Bomb Blast Recovery*
Bone and Pseudo-Trauma in Suspected Violent Deaths
Death-Scene Archaeology
Laboratory Methods in Forensic Anthropology

2001-2014 Facilitator, National Forensic Academy. Practical instructor and speaker on Bone Trauma for their 10 week law enforcement training, Knoxville, TN. Tri-annual lecture to the LEIC training academy, with others.

2004-2010 Adjunct Faculty for the University of Tennessee, Knoxville, Department of Anthropology.

2001-2009 Instructor every other year, Trauma Interpretation in Forensic Anthropology; annual conference sponsored by the Department of Anthropology graduate students, California State University. Weekend-long lecture and laboratory offered to anthropology students and people of the forensic profession and the local FBI. Chico, CA. (80)

- 2002 Instructor, Recognition of Trauma in Anthropology and Pathology; 1 day; International Forensic Meetings Workshop, Montpellier. (45)
- 2001 Instructor, one-day class for Arson Investigator School at Donaldson, TN. Taught for the Tennessee Advisory Committee on Arson (TACA). (20)
- 2001 Instructor, Burned Bone; one-day lecture to the training State Fire Marshal's class, State Crime Laboratory, Donaldson, TN. (15)
- 1999-2006 Instructor, Forensic Anthropology for the FBI Evidence Response Teams; 3 hrs.; University of Tennessee, Knoxville. Annual class offered to about 45 agents, offering basic anthropology, advanced trauma, and recovery. With Dr. M Marks and others.
- 1996-2011 Instructor, Forensic Anthropology; 3 hrs. every or every other year.; Armed Forces Institute of Pathology, National Transportation and Safety Board, and National Museum of Health and Medicine. With Paul Sledzik and others.
- 1996-2004 Instructor for the Southern Institute of Forensic Science, Dr. Waldrip. Below is a list of classes we taught, usually every other year, for the equivalent of 3 credit hours, usually associated with New Orleans University, New Orleans, LA.
Practical Applications of Forensic Anthropology
Advanced Forensic Anthropology
Human Remains: Search, Recovery, and Identification
Crime Scene Evidence Documentation
Advanced Techniques in Forensic Anthropology and Trauma Analysis
- 1995-2003 Assist bloodstain pattern analysis seminars with TP Sutton, M.S., Department of Pathology, University of Tennessee.
- 1995-2003 Crime scene photography instruction with TP Sutton, M.S., Department of Pathology, Univ Tenn.
- 1993-2003 Forensic Anthropology: Radiographic Analysis of Bone Trauma; 1-4 CEU/ annual; Chapter, State, and National meetings of the Society of Radiological Technologists and Nuclear Radiation Technologists, primarily in TN and MS. (50-100)
- 1999-2003 Instructor; Advanced Forensics: Chautauqua, NSF Short Course for College Teachers, Christian Brothers University, Memphis, TN. Taught with TP Sutton, M.S., M.T., and C Gardner, MD. (30)
- 1997-2003 Instructor, Using Science to Solve Crime: Chautauqua, NSF Short Course for College Teachers; 3 hrs; Christian Brothers University, Memphis, TN. (30)
- 1993-2003 Lecturer, Applied Anthropology; guest lecturer/4 times annually; Christian Brothers University, Memphis, TN.
- 1989-2003 Lecturer, Applied Forensic Anthropology for Forensic Odontology; 1 CEU/4 time yearly; Division of Oral Pathology, University of Tennessee, Memphis.
- 1999 Analyses of Trauma in Bone; taught to anthropologists employed by the Central Identification Laboratory, Hawaii, Department of Defense.

- 1997-99 Radiographic and Gross Examination of Bone Trauma; 2 hrs.; Department of Pathology Laboratory, University of Tennessee, Memphis.
- 1998-99 Bi-Annual Homicide Investigators Seminar; no credit; Regional Forensic Center, Memphis.
- 1996-99 Invited lecturer on Forensic Anthropology; 1 CEU; Tennessee Public Defenders.
- 1996-99 Invited lecturer on Forensic Anthropology; 1 CEU; Tennessee Assistant District Attorneys.
- 1987 Forensic Anthropology Seminar; 3 hrs.; National Museum of Natural History, Smithsonian Institution, Washington, D.C.
- 1980-86 Department of Anthropology, University of Tennessee Teaching Assistant. Assisted undergraduate and graduate courses in Human Origins, Skeletal Biology, Human Fragmentary Osteology, Human Paleontology, Advanced Forensics.

Special Skills/Training

- Certified in Bloodstain Pattern Analysis
- Crime scene photographer
- Proficient in digital imaging and Photoshop utilization of images
- Years of experience as a professional archaeologist
- Human Anatomy
- Microscopic examination of bone trauma (no SEM)

Personal

Born: Apr 10, 1954 in Wessington Springs, South Dakota