

CURRICULUM VITAE
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Education

1977 B.A. Saint Mary's College, Sociology/ Anthropology.
1980 M.A. University of Nebraska-Lincoln, Anthropology. Thesis: *Precipitation, temperature and maize agriculture: implications for prehistoric populations in the Middle Missouri subarea, A.D. 900-1675.*
1985 Ph.D. Northwestern University, Anthropology. Thesis: *A study of normal and pathological craniofacial morphology and growth using finite element methods.*

Professional Appointments

2014-present **Distinguished Professor**, Pennsylvania State University, University Park, PA
2000-present **Professor** (Adjunct, part-time), Center for Functional Anatomy and Evolution, Johns Hopkins University School of Medicine, Baltimore.
2000-2014 **Professor**, Department of Anthropology, Pennsylvania State University, University Park, PA (with faculty appointments in the Graduate Program in Genetics and the IBIOS Graduate Program Option in Bioinformatics and Genomics of the Huck Institutes of the Life Sciences)
1999-2000 **Professor**, Department of Cell Biology and Anatomy, Johns Hopkins University, School of Medicine, Baltimore, joint appointment with Department of Plastic Surgery.
1991-1999 **Associate Professor**, Department of Cell Biology and Anatomy, Johns Hopkins University, School of Medicine, Baltimore; joint appointment Department of Plastic Surgery, Johns Hopkins University, Baltimore.
1987-1991 **Assistant Professor**, Department Cell Biology and Anatomy, Johns Hopkins University School of Medicine.
1986-1987 **Instructor**, Department of Cell Biology and Anatomy, Johns Hopkins University, School of Medicine, Baltimore.
1985-1986 **Lecturer** (post-doctoral appointment), Department of Anthropology, Northwestern University, Evanston.
1983-1984 **Research Associate**, Center for Craniofacial Anomalies, University of Illinois, Chicago.
1982-1983 **Technical Research Assistant II**, Cayo Santiago Caribbean Primate Research Center, Bioanthropology Laboratory, Department of Anthropology, Northwestern University.
1978-1980 **Graduate Research Assistant**, H.P. Thomas Site Project, Division of Archeological Research, Department of Anthropology, University of Nebraska, Lincoln.

Professional Societies and Activities

Member: Society of Craniofacial Genetics and Developmental Biology (*Vice President 2010-2012*)
American Association of Anatomists
American Association of Physical Anthropologists
Society for Developmental Biology
Faculty, Collaboration for Craniofacial Development & Disorders, Johns Hopkins University
Board of Directors of the Centre County Women's Resource Center, Inc., State College, PA, 2006-2013

Editorships: Associate Editor: American Journal of Physical Anthropology (January 2009-April 2014)
Editorial Board Member: Frontiers Physiology: Craniofacial Biology

President: Society for Craniofacial Genetics and Developmental Biology (2012-2014)

Current committees:

Member, Skeletal Biology development and disease study section, Center for Scientific Review, National Institute Dental Craniofacial Research, NIH (2011-2015)

Member, Executive Committee, American Association of Physical Anthropologists

Areas of Interest

Biological form and form change, quantitative morphology, craniofacial morphology and dysmorphology, evolutionary developmental biology, craniofacial development in primates, the relationship between ontogenetic mechanisms and phylogenetic change, sexual dimorphism of ontogeny and morphology, molecular basis of craniofacial development, genotype-phenotype correspondence in craniofacial phenotypes

Grants & Fellowships

1979 Recipient, Happold Fund Grant, University of Nebraska, Lincoln

1980 Recipient, University Fellowship, the Graduate School, Northwestern University, Evanston, IL

1981 Recipient, Departmental Fellowship, Dept of Anthropology, Northwestern University, IL

1987-88 The Johns Hopkins University Biomedical Research Support grant, *Three-dimensional analysis of craniofacial dysmorphology by finite-element methods*, \$4,712

1987-89 March of Dimes Birth Defects Foundation Basil O'Connor Research grant (#5-638) *Three-dimensional analysis of craniofacial dysmorphology by finite-element scaling methods*, \$40,000.

1988-91 The Whitaker Foundation Biomedical engineering research grant, *Finite element scaling analysis of the potential of developmental programs for the production of evolutionary change*, \$159,201.

1990-91 The Johns Hopkins University School of Medicine Biomedical Research Support grant, *Validation of the use of computed tomographic images in the study of craniofacial growth*, \$11,417.

1991 National Science Foundation doctoral dissertation improvement grant, *Growth of the human fetal craniofacial complex characterized in three dimensions*, \$9923. Doctoral student: Hannah M. Grausz.

1991 Storz Instrument Company research grant, *A study of the effect of plating systems on the growing rabbit craniofacial skeleton*, \$56,000.

1992-97 National Science Foundation, *Understanding the evolution of ontogenies through growth trajectory analysis*, SBR-9209083, \$139,000.

1993 National Science Foundation Research Experience for Undergraduates (REU) Supplemental Award to "Understanding the evolution of ontogenies through growth trajectory analysis", \$5400.

1993 Ungermann-Bass, Inc., *ATM network for image data base research*, equipment grant, \$150,000.

1993 Synexus, Inc. research grant, *ATM network for image data base research*, \$21,830.

1994 Department of the Army, Rigid Skeletal Fixation of the immature craniofacial Skeleton in the Non-human primate, contract DADA15-94-P-5444, \$13,200.

1994-99 National Institutes of Dental Research, *Heterogeneity in craniosynostosis: subgroup determination by analysis of postnatal craniofacial growth*. Project II of 1 P50 DE11131-01, \$260,000.

1995-96 NIH initiative for Underrepresented minorities in Biomedical Research. Supplement to Project II of 1 P50 DE11131-01, \$25,000.

1996 National Science Foundation REU Supplemental Award to *Understanding the evolution of ontogenies through growth trajectory analysis*, \$4000.

1997-98 The Johns Hopkins University School of Medicine Biomedical Research Support grant, *Posterior plagiocephaly: morphometric tools for subgroup identification*, \$13,608.

1997 Faculty sponsor for Christopher J. Valeri, recipient of the 1997 Provost's Undergraduate Research Award, The Johns Hopkins University, \$2500.

1998-2000 National Research Service Award: senior fellowship, *Genetics of skull development in a Down syndrome mouse model*, 1F33DE/HD05706-01, \$79,500.

1998 Faculty sponsor for Christopher J. Valeri, recipient of the 1998 Provost's Undergraduate Research Award, The Johns Hopkins University, \$2500.

- 1998 National Science Foundation doctoral dissertation improvement grant, *Three-dimensional comparisons of craniofacial growth patterns in modern humans and Neanderthals*, \$11,994. Doctoral student: Gail E. Krovitz.
- 1999-2004 National Institute of Dental and Craniofacial Research, *Genotypic and phenotypic variability in the craniosynostoses*. Project VI of Center for Craniofacial Development and Disorders, 1 P60 DE13078 , \$1,096,621.
- 1999 National Science Foundation SBER Instrumentation Grant, *Acquisition of the Reflex Microscope*, \$45,295.
- 2000 National Science Foundation doctoral dissertation improvement grant, *A three-dimensional analysis of age-related change in the adult craniofacial skeleton*, \$11,991. Doctoral student: Anita M. Lubensky.
- 2001-2004 Faculty sponsor for Cheryl Hill, recipient: National Science Foundation pre-doctoral award.
- 2002 National Science Foundation doctoral dissertation improvement grant, *Craniofacial Asymmetry, Morphological Integration, and Developmental Instability in the Human Skull* (BCS-0234565, \$9,141), Doctoral student: Valerie B. DeLeon.
- 2004 National Science Foundation doctoral dissertation improvement grant: *Quantitative Analysis of Temporal Bone Pneumatization in Homininae* (BCS-0524939, \$9,982), Doctoral student: Cheryl Hill
- 2005-2008 Faculty sponsor for Brenda Frazier, recipient: National Science Foundation pre-doctoral award.
- 2005-2006 National Science Foundation, *Collaborative Research: Genetics of Craniofacial Variation and Human Origins*; co-PIs: Kenneth Weiss, Joan Richtsmeier, Alan Walker (BCS-0523637).
- 2007-2010 National Science Foundation, *Developmental Genetic basis of primate craniofacial variation, and human origins* co-PIs: Kenneth Weiss, Joan Richtsmeier, Alan Walker (BCS-0725227)
- 2008-2013 National Institute of Dental and Craniofacial Research, National Institutes of Health, *Phenogenetics of skull and brain integration in craniosynostosis* (5 R01 DE018500-02)
- 2008-2011 Faculty sponsor for John Starbuck, recipient: National Science Foundation pre-doctoral award.
- 2008-2011 National Science Foundation, *VOSS: HRCT scanning as glue: sociotechnical analysis and support of a loosely-coupled virtual organization of emergent distributed projects* (co-PI with Andrea Tapia[PI], Timothy Ryan, Rosalie Ocker, and Mary Beth Rosson) (OCI-0838400)
- 2008 National Science Foundation doctoral dissertation improvement grant: *Extant island dwarf mammals as models for insular dwarfing in Pleistocene hominids* (BCS 0824583), Doctoral student: Brenda Frazier
- 2009-2011 National Institutes of Health, competitive revision to *Phenogenetics of skull and brain integration in craniosynostosis* (5 R01 DE018500-02S1).
- 2009-2011 AGAUR, Generalitat de Catalunya, Spain (Program: Beatriu de Pinós (BP 2008). Modality A: Fellowships for research stays outside the Spanish country. *Genetic and developmental alterations associated with craniosynostosis*. Fellow: N. Martínez-Abadías
- 2011 National Science Foundation doctoral dissertation improvement grant: *The influence of angiogenesis on human cranial vault development and evolution* (BCS 1061554), Doctoral student: Christopher Percival.
- 2011 National Science Foundation doctoral dissertation improvement grant: *Understanding Gene Dosage Imbalance and Biological Mechanisms Responsible for Craniofacial Variability and Variation* (BCS 1061563), Doctoral student: John Starbuck.
- 2012-2017 National Institute of Dental and Craniofacial Research, National Institutes of Health, *Midface and upper airway in craniosynostosis* (1R01 DE022988-01)
- 2013-2014 Burroughs-Wellcome Fund 2013 Collaborative Research Travel Grant: *Seeing genes make morphology in 3D* (#1012723)
- 2013 Seeing genes in action: Creating an online resource for visualizing craniofacial dysmorphology. Undergraduate Summer Discovery Grant awarded to undergraduate student **Katherine Rhodes**, College of the Liberal Arts, Penn State.

Awards

- 1990 Maryland's Outstanding Young Scientist Award, Allan C. Davis Medal of the Maryland Academy of Sciences

- 1993 W. Barry Wood Award for outstanding preclinical teaching, Johns Hopkins University School of Medicine
- 2004 Distinguished Graduate Award, Edgewood Campus School, Madison, WI
- 2007 Dominican Award for Service to Humanity, Edgewood High School, Madison, WI
- 2009 Alumna Achievement Award, Saint Mary's College, Notre Dame, IN
- 2012 Distinction in the Life Sciences Award, College of the Liberal Arts, Pennsylvania State University
- 2014 Named Distinguished Professor of Anthropology, Pennsylvania State University
- 2014 Faculty Scholar Medal for Outstanding Achievement in the Life and Health Sciences, Pennsylvania State University

Invited Lectures and Presentations

- 1986 A finite element scaling analysis of morphological differences between normal individuals and those affected with Apert and Crouzon syndromes. Symposium: "Quantitative methods in the diagnosis and treatment of craniofacial anomalies", J. Kolar, organizer. Presented at the 55th Annual Meeting of the Amer. Assoc. of Physical Anthropologists, Albuquerque, NM.
- 1986 The study of biological form change. Presented to the Department of Cell Biology and Anatomy, The Johns Hopkins University School of Medicine, Baltimore, MD.
- 1989 The assessment of growth using finite element methods: a review. Presented at the National Computer Graphics Association conference, Philadelphia, April.
- 1989 Three-dimensional analysis of the cranial base in craniosynostosis using computed tomographic images. Symposium organized by Richard Ward. Presented at the annual meeting of the American Association of Physical Anthropologists, San Diego, April.
- 1989 The application of finite-element scaling analysis to the study of size and shape in biological objects. Presented to the symposium, 'Multi-dimensional methods in morphological analysis', organized by the Anatomical Society of Great Britain and Ireland in conjunction with the annual meeting of the Anatomical Society, Liverpool, July, 1989.
- 1989 Applications of finite element scaling analysis in primatology. Presented at the *first Kartause Ittingen Symposium*, 'New quantitative developments in primatology and anthropology', organized by the Anthropologisches Institut, Universität Zurich-Irchel in conjunction with Karger Verlag, Zurich, September.
- 1989 The study of growth from data obtained from computed tomographic (CT) images. Presented as part of the Medical Image Processing Group seminar series, University of Pennsylvania, Philadelphia, December.
- 1990 The biological implications of varying element design in finite-element scaling analyses of growth. Presented in a session on "Segmentation and Quantitation", in the Tomographic Radiology tract of the 12th Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Philadelphia, PA, November.
- 1990 Quantitative analysis of three-dimensional data. Presented at SPIE's Symposium on "Biostereometrics Technology and Applications". Boston, MA, November.
- 1991 Three-dimensional analysis of *Adapis* muzzle (with L. Lanèque). Presented in Montpellier, France, September.
- 1992 Precision and morphometric analysis of biological landmark data. Presented at the "Whole body 3D electronic imaging of the Human body" workshop, Wright-Patterson Air Force Base, Ohio, March.
- 1992 Analysis of growth in craniofacial anomalies. Presented at the Johns Hopkins Craniofacial Conference, The Johns Hopkins Cleft and Craniofacial Center, July.
- 1993 Three-dimensional facial morphology in a strain of dogs exhibiting cleft palate. Symposium organized by R. Ward and K. Kelly. Presented at the annual meeting of the American Association of Physical Anthropologists, Toronto, April.
- 1996 Facial growth patterns and phylogenetic affinities in anthropoids. Anthropologisches Kolloquium presented at the Anthropologisches Institut, Universität Zurich-Irchel, Switzerland, June.
- 1996 Morphometrics: its use in the study of biological patterns. Carnegie Institution of Washington, Department of Embryology seminar series, September.

- 1998 Correspondence of craniofacial dysmorphology and development in Down Syndrome and Ts65Dn mice. "Toward a molecular understanding of craniofacial morphogenesis-An International Symposium", Bethesda.
- 1999 Phenotypes in craniosynostosis: how we measure, why we measure, what we learn. Presented at the Post Conference symposium, "Craniosynostosis: genome, treatment, outcome", of the American Cleft Palate-Craniofacial 56th annual meeting.
- 1999 Measuring phenotypes to study genotypes. Departmental of Anthropology seminar, The Pennsylvania State University.
- 1999 A bootstrap approach to detecting phylogenetic signals in morphometric data. The Systematics Association Biennial Conference, University of Glasgow, August (with TM Cole, III (presenter) and SR Lele).
- 1999 Phenotypic variability of craniofacial dysmorphology. Pediatric Grand Rounds. The Johns Hopkins University, Baltimore, October.
- 2000 The face of Down syndrome in man and mouse (Roger H. Reeves presenter), AAAS meeting, February, Washington, D.C.
- 2000 Normal human anatomy of the pelvis and perineum. A web-lecture given to first year medical students, The Johns Hopkins University Medical School, November, Baltimore, MD.
- 2001 The quantitative study of dysmorphology using clinically acquired images. A lecture given at the "State of the Science" workshop on disorders associated with Chromosome 18, the National Institutes of Child Health and Human Development, NIH, July, Bethesda, MD.
- 2001 The role of *Gscl* in the development of the craniofacial skeleton. Seminar presented at the Children's Hospital of Philadelphia, Department of Genetics, November.
- 2001 Gross anatomy of the pelvis and perineum. Lecture presented at the Johns Hopkins University School of Medicine, December, Baltimore, MD.
- 2002 Dysmorphology, asymmetry, growth: what we've learned from craniosynostosis. Presented to the faculty of the Center for Craniofacial Development and Disorders, the Johns Hopkins Hospital, Baltimore, March (with Valerie DeLeon and Kristina Aldridge).
- 2002 Studying asymmetry with Euclidean Distance Matrix Analysis (EDMA). Presented at a symposium entitled "Modern morphometrics in Physical Anthropology", Annual meeting of the American Association of Physical Anthropologists, Buffalo, NY, April. (with Theodore M. Cole, III, Erin Lindsay, Christopher D. Kreger, Valerie DeLeon, Kristina Aldridge, Subhash Lele).
- 2002 3D anatomy of the pelvis and perineum. Lecture presented at the Johns Hopkins University School of Medicine, December, Baltimore, MD.
- 2003 Genotypes and phenotypes in craniofacial anomalies: closing the gap. Lecture presented to the Department of Molecular Genetics, Indiana University-Purdue University at Indianapolis, February, Indianapolis.
- 2003 Developmental instability of the skull in aneuploidy. Presented in *Symposium 23: Morphological model systems in evolution and development* at the 9th Congress of the European Society for Evolutionary Biology, Leeds, UK, August (with TM Cole, JM Leszl, CA Hill, JL Budd, RH Reeves).
- 2003 Morphological integration of the neural component in craniosynostosis. Presented at Advances in the modeling of form: clinical and computational interfaces: A Symposium in honor of the work of Professor Melvin L. Moss, Columbia University, New York, NY, October (with Kristina Aldridge).
- 2003 Grant writing in anthropology. Presented at the Graduate Student/Post Doc Workshop as part of the Professional Development Series. The Pennsylvania State University, October.
- 2003 Morphological integration of central nervous system and cranium in craniosynostosis. Presented at the Society of Craniofacial genetics 26th annual meeting and scientific symposium, Los Angeles, CA.
- 2003 Probing the development of complex craniofacial traits using 3D imaging and quantitative models. Presented in the symposium, Frontiers of dysmorphology: craniofacial development and disorders, American Society of Human Genetics Annual meeting, November, Los Angeles, CA.
- 2004 Using imaging to describe, quantify and understand chromosomal abnormality phenotypes. Presented at the Inaugural World Congress on Chromosomal Abnormalities, June, San Antonio.

- 2004 Inferring developmental contributions to craniofacial variation from quantitative analysis of images. Presented in the symposium, 3D imaging in anthropological research, Annual meetings of the Canadian Association for Physical Anthropology, October, London, Ontario.
- 2006 L'intégration morphologique de le crâne et le cerveau. Département de Paléontologie et Anatomie Comparée, Museum National d'Histoire Naturelle, January, Paris.
- 2007 Quantitative study of form and change in form: mandibular growth. Presented in the workshop entitled, Techniques for quantification of growth and evolution of form, Université Paul Sabatier. EVAN Consortium Intensive Training Course, April, Toulouse, France.
- 2007 Developmental basis of morphological integration of brain and skull in craniosynostosis. Presented in the symposium "Morphological models systems in evolution and development", International Congress of Vertebrate Morphology 8, July, Paris.
- 2007 Skull shape in Down syndrome mouse models. Presented at the Expert Workshop on the Biology of Chromosome 21 Genes: Towards Gene-phenotype Correlations in Down Syndrome, Sept 28, Tysons Corner, VA.
- 2007 Primate models for understanding the contribution of genes, development and growth pattern to morphology. American Society for Craniofacial Genetics annual meeting, Oct 23, San Diego.
- 2007 Brain-skull relationships in the development of craniosynostosis. Neural imaging reading group, PSU.
- 2008 Interaction of brain and skull. Gordon Research Conference on Craniofacial morphogenesis and tissue regeneration. Feb 10-15, Lucca, Italy.
- 2008 Brain-skull relationships in craniofacial development, evolution and disease. Department of Genetics and Genomic Sciences, Mt. Sinai Medical Center, NY.
- 2008 Getting a head: lessons from development, disease and phenogenetics. Presented at a symposium on Developmental Biology and Tissue Regeneration at University of Southern California, May.
- 2008 Morphological integration of the cranial base after surgical intervention in the face and vault. Presented at the Conference on Biomedicine in Orthodontics: from tooth movement to facial Growth, Asilomar Conference Center, Monterey, CA.
- 2008 Morphological integration of the craniofacial complex in unilateral cleft lip and palate. American Society for Craniofacial Genetics annual meeting, Nov 11, Philadelphia.
- 2009 Developmental basis of morphological integration of brain and skull in craniosynostosis. American Association of Physical Anthropologist annual meeting, Chicago.
- 2009 Developmental origin of covariation between traits (with Kat Willmore, Jim Cheverud and Jane Buikstra). American Association of Physical Anthropologist annual meeting, Chicago.
- 2009 Of mice and men: variation in craniosynostosis phenotypes. Department of Genetics Grand Rounds, Emory University, Atlanta, November.
- 2010 Brain and skull phenotypes in craniosynostosis: how mouse models bring a human condition into view. Social, Life and Engineering Sciences Imaging Group colloquia, Penn State, February.
- 2010 The relationship between hard and soft tissue: lessons for reconstructing virtual endocasts. Annual meetings of the American Association of Physical Anthropologists, Albuquerque, April.
- 2010 How to get a head in human evolution. Presented at the 60th Alumni Institute faculty lecture series, Penn State University, June.
- 2010 An integrated systems approach to craniofacial development. (Collaborative project presented by Ken Weiss), European Evolutionary Development Society meetings, Paris, July.
- 2010 An integrated systems approach to craniofacial development (and craniosynostosis). 33rd Meeting of the Society of Craniofacial Genetics. Bethesda, MD, USA (abstract published *Amer J Med GenetPart A* 155:285)
- 2011 Biological complexity and the case of craniosynostosis. Department of Anatomy and Cell Biology noon lecture series. Temple University, Philadelphia, PA. February.
- 2011 Connective tissue growth factor (CTGF/CCN2) is required for normal intramembranous and endochondral ossification (co-authors: Lambi, Pankratz, Hendsi, Rzampour, Pixley, Barbe, Safadi and Popoff). Presented by Alex Lambi at the annual meeting of the International CCN Society, Vancouver, September.

- 2012 FGF/FGFR signaling in evolution, development and disease. Gordon Research Conference on Craniofacial morphogenesis and tissue regeneration. March 18-23, Ventura, CA
- 2012 Why the long face? Disease phenotypes as a window on evolutionary change. Speaker in symposium : *Finding our inner animal: understanding human evolutionary variation via experimental model systems*. Annual meeting of the AAPA, April, Portland, OR (abstract published *Amer J Phys Anthropol* 147, S54 :249.)
- 2012 Making a head: diverse craniofacial outcomes in disease. Speaker in symposium entitled, *The Role of Variation during Morphogenesis in Evolution and Disease*, American Association of Anatomists meeting at Federation of American Societies for Experimental Biology 2012, San Diego, April.
- 2012 Genomic dissection of normal craniofacial variation. Radcliff Exploratory Seminar in Craniofacial Evolutionary Developmental Biology. Cambridge, MA. June
- 2012 Seeing the dysmorphology of craniosynostosis syndromes. Seminar presented to Systems Biology Unit, Centre for Genomic Regulation, Barcelona, Spain, November.
- 2012 To the closed suture and beyond! cell-to-cell signaling in FGFR-related craniosynostosis syndromes. Seminar presented to Department of Biology, Case Western Reserve University, Cleveland, OH, November.
- 2013 Effects of sonic hedgehog on craniofacial morphology: implications for patients with Down syndrome (co-authors Nandini Singh, Tara Dutka, Roger Reeves). Presented by Nandini Singh at *35th Meeting of the Society of Craniofacial Genetics*, Boston, MA, October.
- 2013 Opportunities for growth disguised as unsolvable problems. Closing Plenary Lecture, IV CRG Postdoctoral Symposium, Center for Genome Regulation, Barcelona, Spain, November.
- 2013 Systems within systems: craniofacial growth. Seminar presented to Systems Biology Unit, Centre for Genomic Regulation, Barcelona, Spain, November.
- 2014 Evolutionary developmental biology of FGF/FGFR signaling in craniosynostosis conditions. Physiology Seminar Series, Johns Hopkins University, Baltimore, January.
- 2014 Influence of angiogenesis on craniofacial bone morphology, with Percival C, Winkler A, Kawasaki K, Pankratz T, Jabs E, Wang L, presented by Chris Percival at the 82nd annual meeting of the American Assoc of Physical Anthropol., Calgary, Alberta (abstract published *Amer J Phys Anthropol*, S58 :219)
- 2014 The role of FGF/FGFR signaling in cranial integration: implications for primate evolution, with N Singh, Y Heuzé, K Flaherty, C Basilio, G Holmes, presented by Nandini Singh at the 82nd annual meeting of the American Association of Physical Anthropologists, Calgary, Alberta (abstract published *Amer J Phys Anthropol*, S58: 240)

Symposia/workshops/study sessions/meetings organized

- 1987 The use of morphometric techniques in the study of biological form change (symposium organized with JM Cheverud). 56th Annual Meeting of the Amer. Assoc. of Phys. Anthropol., New York
- 1992 Anthropological perspectives on craniosynostosis (symposium organized with JC Kolar). 61st Annual meeting of the American Association of Physical Anthropologists, Las Vegas.
- 1994 Three-dimensional morphometrics. Workshop given at the Fourth International Congress of Vertebrate Morphology, Chicago.
- 1998 Analysis of morphology and morphological change using two or three-dimensional data. Study session given at the annual meetings of the American Cleft Palate-Craniofacial Association, Baltimore.
- 2007 The genotype-phenotype map (symposium organized with Benedikt Hallgrímsson) ICVM 8, Paris.
- 2010 Genetic and developmental basis of the evolution of complex traits (symposium organized with Chris Klingenberg), European Society for Evolutionary Developmental Biology, Paris.
- 2011 Society of Craniofacial Genetics and Developmental Biology annual meeting, Montreal, Canada.
- 2012 Society of Craniofacial Genetics and Developmental Biology annual meeting, San Francisco, CA.
- 2013 Society of Craniofacial Genetics and Developmental Biology annual meeting, Boston, MA.
- 2014 Building Bones: Studies of Bone Growth in Anthropology (with CJ Percival), symposium organized for the 83rd Annual meeting of the Amer Assoc of Physical Anthropol, Calgary, Alberta, Canada.

Volunteered presentations (including published abstracts)

- Richtsmeier, JT, JM Cheverud, and JE Buikstra 1983 Etiology of cranial nonmetric traits in the rhesus macaques of Cayo Santiago. *Amer. J. of Phys. Anthropol.* 60(2).
- Richtsmeier, JT, JW McGrath, and JM Cheverud 1984 Heritability and etiology of cranial nonmetric traits in random bred mice. *Amer. J. of Phys. Anthropol.* 63(2).
- Richtsmeier, JT 1985 A two-dimensional application of the finite element scaling method to growth of human crania. *Amer. J. of Phys. Anthropol.* 66(2).
- Richtsmeier, JT 1985 A study of growth in normal individuals and Apert and Crouzon syndromes using the finite element scaling method. *Annals of Human Biology*, Montreal.
- Cheverud, JM and JT Richtsmeier 1985 A finite element scaling analysis of growth in rhesus monkeys. *Annals of Human Biology*, Montreal.
- McGrath, JW and JT Richtsmeier 1985 Heritability of nonmetric traits in randombred mice. Presented at the meeting of Society for the Study of Evolution and the American Society of Naturalists, Chicago.
- Richtsmeier, JT and JM Cheverud 1986 Sexual dimorphism of facial growth in *Macaca mulatta* and *M. fascicularis*. Presented at the International symposium on vertebrate morphology, Vienna.
- Richtsmeier, JT 1987 Ontogenetic scaling and sexual dimorphism in *Macaca* crania. *Amer. J. of Phys. Anthropol.* 72(2) 247.
- Richtsmeier, JT 1988 Morphological similarities in *Aegyptopithecus* and *Afropithecus*. *Amer. J. of Phys. Anthropol.* 75(2) 260-261.
- Richtsmeier, JT, JL Marsh, and ML Vannier 1988 Three-dimensional analysis of craniofacial morphology and growth in craniosynostosis. Program, Cleft Palate Association Meeting, Williamsburg, VA.
- Hallman, LA and JT Richtsmeier 1988 Craniofacial morphology of the trisomy 16 mouse. Program, International Association for Dental Research, April, Montreal, Quebec.
- Richtsmeier, JT, HM Grausz, JL Marsh, and MW Vannier 1989 Three dimensional analysis of the cranial base in craniosynostosis. *Amer. J. of Phys. Anthropol.* 78(2) 290.
- Grausz, HM, JT Richtsmeier, and SJ Danahey 1989 Growth in *Macaca fascicularis* and *Cebus apella* compared using finite-element scaling. *Amer. J. of Phys. Anthropol.* 78(2) 231.
- Wong, L, CR Dufresne, PM Manson, and JT Richtsmeier 1989 The effect of rigid fixation on the growing craniofacial skeleton. Presented at the 34th Annual Meeting of the Plastic Surgery Research Council, April, Atlanta.
- Wong, L, CR Dufresne, JT Richtsmeier, and PM Manson 1989 The effect of rigid fixation on the growing craniofacial skeleton: periosteal elevation, coronal suture plating, and frontal bone plating. Presented at the Northeastern Plastic Surgery Society Conference, October.
- Wong, L, CR Dufresne, JT Richtsmeier, and PM Manson 1989 The effect of rigid fixation on the growing craniofacial skeleton: periosteal elevation, coronal suture plating, and frontal bone plating. *Proceedings of the American Society of Plastic and Reconstructive Surgery*. Presented at the annual meeting of the American Society for Plastic and Reconstructive Surgery, San Francisco, October.
- Corner, BD, JT Richtsmeier, and S Danahey 1990 Morphometric analysis of skull growth in *Cebus apella*. *Amer. J. of Phys. Anthropol.* 81(2) 208.
- Richtsmeier, JT and SR Lele 1990 Analysis of morphological variation within neontological and paleontological species. *Amer. J. of Phys. Anthropol.* 81(2) 286.
- Grausz, HM, JT Richtsmeier, and ML Oster-Granite 1991 Morphogenesis of the brain and craniofacial complex in trisomy 16 mice. Presented at the meeting of the National Down Syndrome Society, New York City, January.
- Richtsmeier, JT 1991 Implications of the use of varying element types in finite-element analysis of craniofacial growth. *Amer. J. of Phys. Anthropol.*, Supplement 12:151.
- Dufresne, CR, BD Corner, and JT Richtsmeier 1991 Categorization of craniofacial dysmorphology for purposes of predicting surgical outcome. Presented at the IV Biannual meeting of the International Society of Craniomaxillofacial Surgery, Santiago de Compostela, Spain, June.
- Richtsmeier, JT, CR Dufresne 1992 The interaction of growth pattern and surgical outcome in craniosynostosis. *Amer. J. of Phys. Anthropol.*, Supplement 14:138.
- Grausz, HM, JL Marsh, MW Vannier, JT Richtsmeier 1992 A three-dimensional study of basicranial growth in craniosynostosis as compared to normal growth patterns. *Amer. J. of Phys. Anthropol.*, Supplement 14:83-84.

- Corner, BD, JT Richtsmeier 1992 Craniosynostosis in a collection of wild shot mantled howler monkeys (*Alouatta palliata*). *Amer. J. of Phys. Anthropol.*, Supplement 14:63.
- Lele, S, JT Richtsmeier 1992 A statistical method for the comparison of growth patterns applied to sexual dimorphism of ontogeny in macaques. *Amer. J. of Phys. Anthropol.*, Supplement 14:108.
- Dufresne, CR, H Grausz, JT Richtsmeier 1993 The effects of rigid fixation on the growing craniofacial skeleton. Presented at a symposium entitled, "Rigid fixation of the craniofacial skeleton" sponsored by the Tampa Bay Craniofacial Center, the University of Florida, and Howmedica.
- Lele, S, JT Richtsmeier 1993 Confidence intervals for growth and form difference based on Euclidean distance matrix analysis. *Amer. J. of Phys. Anthropol.*, Supplement 16:133.
- Corner, BD, DJ Meldrum, JT Richtsmeier 1993 The relationship of Cebus and Saimiri: Synapomorphis and cranial form. *Amer. J. Phys. Anthropol.*, Supplement 16:74.
- Richtsmeier, JT, TM Cole, III, S Lele 1994 Euclidean distance matrix analysis: models for growth. Presented at the fourth International Congress of Vertebrate Morphology, Chicago, IL, July-August.
- Mayer, MH, R Ellenbogen, JO Hollinger, L Wong, JT Richtsmeier, JA Bley, D Yules, PN Manson 1994 Rigid skeletal fixation of the immature craniofacial skeleton in non-human primates. Presented at a symposium, "Resolving controversies in craniomaxillofacial surgery: the role of plate and screw fixation for craniofacial reconstruction in infants, children and young adults", Amer.Soc. of Maxillofacial Surgeons, Sept, San Diego.
- Cole, TM III, JT Richtsmeier, S Lele 1995 Problems in the character analysis of morphometric data, with examples from the Atelinae. *Amer. J. of Phys. Anthropol.*, Supplement 17.
- Kontis, TC, and JT Richtsmeier 1995 A longitudinal study of rabbit skull base growth using 3-dimensional CT analysis. Presented at the American Academy of Facial Plastic and Reconstructive Surgery, September, New Orleans.
- Dufresne, CR, R Ragavan, S Fang, P Pang, JT Richtsmeier 1995 Craniofacial surgical planning and dynamic skeletal modeling: new tools to predict growth following surgery. Presented at the VIth International Congress of Craniofacial Surgery, October, Saint Tropez.
- Mayer, MH, RG Ellenbogen, JO Hollinger, L Wong, TM Cole, JT Richtsmeier, J Manson, JA Bley, D. Yules, PN Manson 1995 Rigid skeletal fixation of the immature craniofacial skeleton in the non-human primate. Presented at the VIth International Congress of Craniofacial Surgery, October, Saint Tropez.
- Fang, S, R Raghavan, JT Richtsmeier 1996 Volume morphing methods for landmark based 3D image deformation. Presented at the *Society of Photo-Optical Instrumentation Engineers Conference (SPIE)*.
- Burrows, AM, MP Mooney, TD Smith, HW Loskin, MI Siegel, JT Richtsmeier 1996 Three-dimensional analysis of craniofacial growth in congenital coronal suture synostosed rabbits using Euclidean Distance Matrix Analysis. *Amer. J. of Phys. Anthropol.*, Supplement 22: 77.
- Richtsmeier, JT, S Lele, TM Cole III 1996 Growth patterns and phylogenetic relationships among the anthropoids. *Amer. J. of Phys. Anthropol.*, Supplement 22: 197-198.
- Raghavan, R, P Pang, S Fang, JT Richtsmeier 1996 Three dimensional morphing of anthropoid craniofacial morphology for the study of growth and evolution. *Amer. J. of Phys. Anthropol.*, Supplement 22: 193.
- Kelly, D, D Hauser, T Kontis, J Richtsmeier 1996 Registration points for 3-D visualization of normal growth are found in the cranial base of the New Zealand White Rabbit. Presented at the Experimental Biology '96 Conference.
- Kelly, DK, T Kontis, D Hauser, JT Richtsmeier 1996 Registration points for 3-D visualization of normal growth in the cranial base of the New Zealand White Rabbit. Presented at the American Cleft Palate-Craniofacial Annual Meeting, April, San Diego.
- Richtsmeier, JT, J Ohman, C VanderKolk, B Carson, S Fang, R Raghavan, D Hauser 1996 3D Analysis and visualization of growth in craniosynostosis. Presented at the American Cleft Palate-Craniofacial Annual Meeting, April, San Diego.
- Richtsmeier, JT, J Ohman, C VanderKolk, B Carson, E Waks, H Said, P Elfert, T Cole, S Lele 1996 Heterogeneity in sagittal synostosis: morphology and etiology. Presented at the American Cleft Palate-Craniofacial Annual Meeting, April, San Diego.
- Ohman, JC, H Tan, C VanderKolk, JT Richtsmeier 1996 Craniosynostosis in mantled howler monkeys (*Alouatta palliata*) a new look with computed tomography. Presented at the American Cleft Palate-Craniofacial Annual Meeting, April, San Diego.

- Ardayfio, P. and JT Richtsmeier 1996 Morphology and growth in sagittal synostosis. Presented at the Argonne Symposium for Undergraduates in Science, Engineering and Mathematics, Argonne National Laboratory, November.
- Cole, TM III, JT Richtsmeier, I Horovitz, RDE MacPhee 1997 Morphometric affinities of *Paralouatta varonai*. *Amer. J. of Phys. Anthropol.*, Supplement 24: 93-94.
- Krovitz, G, TM Cole, III, JT Richtsmeier 1997 Three-dimensional comparisons of craniofacial growth patterns in Neanderthals and modern humans. *Amer. J. of Phys. Anthropol.*, Supplement 24: 147.
- Li, Y and JT Richtsmeier 1997 Morphometric analysis of the ontogeny of sexual dimorphism of the bony pelvis in the squirrel monkey (*Saimiri sciureus*, Cebidae). *Amer. J. of Phys. Anthropol.*, Supplement 24: 155.
- Richtsmeier, JT, TM Cole III, C Valeri, GE Krovitz, S Lele 1997 Growth and morphology in sagittal synostosis. Presented at the American Cleft Palate-Craniofacial Annual Meeting, April, New Orleans.
- Cole, TM III, GE Krovitz, JT Richtsmeier 1997 Patterns of calvarial growth in unilateral lambdoid synostosis and posterior plagiocephaly without synostosis. Presented at the American Cleft Palate-Craniofacial Annual Meeting, April, New Orleans.
- Gersony, R and JT Richtsmeier 1997 Web-Lecture prototype, "Basics of the Pelvis and Perineum", using an anatomical digital art data base. Presented at a University-wide symposium, "From Vision to Reality: integrating learning technologies into Hopkins Education", The Johns Hopkins University, October.
- Long, L, JT Richtsmeier, A Lubensky, M Yo, M Abrams, A Patwardhan, A Reiss, RH Reeves 1997 Segmentally trisomic Ts65Dn mice show several morphological phenotypes of Down Syndrome. 7th International Workshop on Human Chromosome 21, Berlin, Germany.
- Valeri, CJ, TM Cole, S Lele, JT Richtsmeier 1998 Capturing data from three dimensional surfaces using fuzzy landmarks. *Amer. J. of Phys. Anthropol.*, Supplement 26: 222.
- Cole, TM,III, MA O'Leary, JT Richtsmeier 1998 Morphometric modeling of evolutionary form change. *Amer. J. of Phys. Anthropol.*, Supplement 26: 121-122.
- Zumpano, M and JT Richtsmeier 1998 A three dimensional morphological analysis of Trigenocephaly. American Cleft Palate-Craniofacial Association Program: page 70.
- Richtsmeier, JT, LL Baxter, RH Reeves 1998 Postcranial and cranial phenotypes of segmentally trisomic Ts65Dn mice are similar to those of Down Syndrome. Presented at a Conference celebrating the life and work of D'Arcy Wentworth Thompson, "On growth and Form: spatio-temporal patterning in biology", Dundee, Scotland.
- Cole, TM III, VB DeLeon, S Lele, JT Richtsmeier 1998 Recognition of shape-conservative landmark cliques in the morphometric study of form. Presented at a Conference celebrating the life and work of D'Arcy Wentworth Thompson, "On growth and Form: spatio-temporal patterning in biology", Dundee, Scotland.
- Baxter, LL, M Abrams, JT Richtsmeier, A Reiss, RH Reeves 1998 Ts65Dn segmentally trisomic mice exhibit morphological changes in cerebellum similar to those in Down Syndrome. *Amer J Hum Genetics*, 63 (4) A 159.
- Richtsmeier, JT, K Aldridge, V DeLeon, CJ Valeri, MP Zumpano, JL Marsh, C VanderKolk, BS Carson 1999 Quantification of distinct craniofacial morphologies in isolated metopic, sagittal, and unicoronal synostosis and Crouzon syndrome, using a principle coordinates application of EDMA. Presented at the American Cleft Palate-Craniofacial Association meetings, Scottsdale, AZ.
- Zumpano, MP, VB DeLeon, BS Carson, CA VanderKolk, JT Richtsmeier 1999 A comparison of basicranial morphology between pre- and post-operative patients with sagittal synostosis. Presented at the American Cleft Palate-Craniofacial Annual Meeting, Scottsdale, AZ.
- DeLeon, VB, MP Zumpano, JT Richtsmeier 1999 Effects of neurocranial surgery on basicranial growth in isolated sagittal synostosis. *Amer. J. of Phys. Anthropol.*, Supplement 28: 117.
- Aldridge, KA and JT Richtsmeier 1999 Patterns of craniofacial variability in three savanna baboon groups. *Amer. J. of Phys. Anthropol.*, Supplement 28: 82-83.
- Lubensky, AM and JT Richtsmeier 1999 Craniofacial change in the mature and elderly: a three-dimensional comparison of sexual dimorphism in aging. *Amer. J. of Phys. Anthropol.*, Supplement 28:187.
- Richtsmeier, JT, LL Baxter, RH Reeves 1999 Morphological characteristics and developmental processes of aneuploidy. *Amer. J. of Phys. Anthropol.*, Supplement 28:232-233.
- Valeri, CJ, RH Reeves, CB Ruff, JT Richtsmeier 1999 The limits and possibilities of micro CT scanning. *Amer. J. of Phys. Anthropol.*, Supplement 28:269-270.

- Baxter, LL, JT Richtsmeier, RH Reeves 1999 Completely penetrant phenotypes in Ts65Dn mice provide a key to defining mechanisms of gene action in Down syndrome. Presented at the International Conference on Down Syndrome, Israel.
- Valeri, CJ, TM Cole, II, S Lele, JT Richtsmeier 2000 Directional asymmetry in plagiocephaly without synostosis and unicoronal synostosis. *Amer. J. of Phys. Anthropol.*, Supplement 30: 308.
- Aldridge, K, PE Barta, GD Pearlson, JT Richtsmeier 2000 Brain morphology, MRI data, and landmark-based analyses of form. *Amer. J. of Phys. Anthropol.*, Supplement 30: 94.
- DeLeon, VB, TM Cole, III, S. Lele, JL Marsh, JT Richtsmeier 2000 Reversal of asymmetric growth in the cranial base following neurocranial surgery in unicoronal craniosynostosis. *Amer. J. of Phys. Anthropol.*, Supplement 30: 136.
- Richtsmeier, JT, TM Cole, III, CJ Valeri, T Kontis 2000 Comparison of longitudinal, cross-sectional and mixed longitudinal data in growth analysis. *Amer. J. of Phys. Anthropol.*, Supplement 30: 262-263.
- Richtsmeier, JT, CJ Epstein, A Zumwalt, E Carlson, RH Reeves 2000 Maldevelopment of the craniofacial skeleton in Ts1Cje mice parallels that in Ts65Dn mice. Molecular Biology of Chromosome 21 and Down Syndrome Workshop, Jackson Laboratory, Bar Harbor, ME.
- Aldridge, K.A., JL Marsh, CA Perlyn, JT Richtsmeier 2001 Quantification of central nervous system dysmorphology in isolated craniosynostoses. Presented at the American Cleft Palate-Craniofacial Annual Meeting, Minneapolis, MN.
- Cole, TM, III, JT Richtsmeier 2001 Morphometric assessment of craniofacial form in Apert and Crouzon syndromes: what, if anything, is "normal?" Presented at the American Cleft Palate-Craniofacial Annual Meeting, Minneapolis, MN. Presented at the American Cleft Palate-Craniofacial Annual Meeting, Minneapolis, MN.
- DeLeon, VB, K Dansey, AA Kane, TM Cole, III, S Lele, JL Marsh, CA VanderKolk, BS Carson, CA Perlyn, DP Govier, JT Richtsmeier 2001 Neurocranial surgery affects growth patterns in the osseous cranial base and soft tissues of the face and ear regions. Presented at the American Cleft Palate-Craniofacial Annual Meeting, Minneapolis, MN.
- Kane, AA, VB DeLeon, C Valeri, JT Richtsmeier, L-J Lo 2001 Preoperative osseous dysmorphology of unilateral complete cleft lip and palate: a Euclidean Distance Matrix Analysis of CT data. Presented at the American Cleft Palate-Craniofacial Annual Meeting, Minneapolis, MN.
- Richtsmeier, JT, A Zumwalt, CJ Epstein, EJ Carlson, RH Reeves 2001 Parallels of craniofacial development in two mouse models for Down Syndrome. Presented at the American Cleft Palate-Craniofacial Annual Meeting, Minneapolis, MN.
- Aldridge, KA, JL Marsh, AA Kane, CA Perlyn, JT Richtsmeier 2001 Quantification of the impact of isolated craniosynostoses on central nervous system morphology. Presented at the 9th International Congress on Cleft Palate and related Craniofacial Anomalies, Göteborg, Sweden.
- Richtsmeier, JT, CJ Valeri, FL Williams, T Kontis 2001 Comparison of longitudinal and cross-sectional data in growth analysis • Presented at the 9th International Congress on Cleft Palate and related Craniofacial Anomalies, Göteborg, Sweden.
- Kane, AA, VB DeLeon, C Valeri, JT Richtsmeier, L-J Lo 2001 The effects of growth and lip repair upon osseous facial morphology in unilateral complete cleft lip and palate: an analysis of longitudinal CT data. Presented at the 9th International Congress on Cleft Palate and related Craniofacial Anomalies, Göteborg, Sweden.
- Richtsmeier, JT, A Zumwalt, CJ Epstein, EJ Carlson, RH Reeves 2001 Maldevelopment of the craniofacial skeleton in two mouse models for Down syndrome. Presented at the 9th International Congress on Cleft Palate and related Craniofacial Anomalies, Göteborg, Sweden.
- Richtsmeier, JT, A Zumwalt, CJ Epstein, EJ Carlson, RH Reeves 2001 Parallels of maldevelopment of the craniofacial skeleton in Down syndrome and in two segmentally trisomic mouse models. Presented at the 6th International Congress of Vertebrate Morphology, Jene, Germany.
- Williams, FL, JT Richtsmeier 2001 Do cross-sectional craniofacial growth data underestimate longitudinal growth? Testing a hypothesis of Franz Boas. Presented in the symposium, "Plastic and Enduring: 100 Years of Studies of Past Lives and Past Histories", Amer. Assoc. of Anthropol. annual meetings, Washington, D.C.
- Cole, Theodore M., K Aldridge, V DeLeon, J Marsh, JT Richtsmeier 2002 Three-dimensional visualization of midsagittal plane distortions in cases of craniofacial asymmetry. Presented at the annual meetings of the American Cleft Palate-Craniofacial Association, Seattle.

- Richtsmeier, JT, J Lund, ES Lindsay, J Leszl, RH Reeves 2002 Mice homozygous for a null allele of *Gscl* show dysmorphology of the cranial base and face. Presented at the annual meetings of the American Cleft Palate-Craniofacial Association, Seattle.
- Aldridge K, Marsh JL, Perlyn C, Panchal, J, Richtsmeier JT (2002) Effects of neurocranial surgery on growth of the central nervous system in isolated sagittal craniosynostosis. Presented at the annual meeting of the American Cleft Palate-Craniofacial Association, Seattle.
- Richtsmeier, JT, TM Cole, III, J Leszl, CA Hill, V Aquino, R.H. Reeves (2002) Development of skull dysmorphology in Ts65Dn segmentally trisomic mice. Poster presented at the annual meetings of the American Society of Human Genetics, Baltimore. *Amer. J. Hum Genet* 71(4):280.
- Richtsmeier, JT, KJ Aldridge, TM Cole, III, VB DeLeon, D Govier, JL Marsh, AA Kane, J Panchal, C VanderKolk, BS Carson (2003) Integration of brain and bone in craniosynostosis. Presented at the annual meeting of the American Cleft Palate-Craniofacial Association, Asheville, NC.
- Hill, CA, RH Reeves, CJ Epstein, C Valeri, ES Lindsay, LA Baxter, TM Cole, JT Richtsmeier (2003) Developmental instability and skeletal phenotypes in Down syndrome. Presented at the annual meeting of the American Association of Physical Anthropology, Tempe, AZ. *Amer J Phys Anthropol* Suppl 36:114.
- Aldridge K, DeLeon VB, Richtsmeier, JT (2003) Developmental instability and isolated sagittal craniosynostosis. *American Journal of Human Genetics, Supplement 73*: 322.
- Leszl, J, R Reeves, L Olsen, JT Richtsmeier (2004) The 'critical region' is not sufficient to produce characteristic craniofacial phenotypes in a mouse model for Down syndrome. Presented at the 61st annual meeting of the American Cleft palate-craniofacial association, Chicago.
- Hill, C, A Zumwalt, J Leszl, C Epstein, R Reeves, TM Cole III, JT Richtsmeier (2004) Directional asymmetry in mouse models for craniofacial disorders. Presented at the 61st annual meeting of the American Cleft palate-craniofacial association, Chicago.
- Frazier, B, M. Mooney, B Losken, M Barbano, M Moursi, C Martin, M Siegel, P Yan, JT Richtsmeier (2004) Growth comparison via linear distance analysis of craniosynostotic rabbits treated with anti-TGF β antibody at suturectomy site. Presented at the 61st annual meeting of the American Cleft palate-craniofacial association, Chicago.
- Richtsmeier, JT K Aldridge, TM Cole III, V DeLeon, P Yan, J Panchal, B Carson, C VanderKolk, J Marsh, D Govier, A Kane (2004) The relationship between skull and central nervous system phenotypes in craniosynostosis. Presented at the 61st annual meeting of the American Cleft palate-craniofacial association, Chicago.
- Cole, M, TM Cole, III, JT Richtsmeier 2004 Craniofacial morphology in human neonatal progeroid syndrome. Presented at the 61st annual meeting of the American Cleft palate-craniofacial association, Chicago.
- Richtsmeier, JT, CJ Epstein, RH Reeves 2004 A test of the "developmental instability" hypothesis in two mouse models for Down syndrome. Presented at the Expert Workshop on the Biology of Chromosome 21 Genes, Washington, D.C.
- Olson, LE, J Leszl, JT Richtsmeier, RH Reeves 2004 The DSCR is not critical for Down syndrome. Presented at the Expert Workshop on the Biology of Chromosome 21 Genes, Washington, D.C.
- Aldridge K, Boyd SAB, Capone G, DeLeon VB, Richtsmeier JT 2004 Anthropometric landmarks from 3dMD surface images: a study of accuracy and repeatability. Fifty-fourth annual meeting of the American Society of Human Genetics. Toronto, Canada. Abstract. Richtsmeier, JT, K Aldridge, AA Kane, JL Marsh, J Panchal, VB DeLeon 2005 Phenotypic integration of brain and skull. Presented at the annual meeting of the American Association of Physical Anthropology, Milwaukee, WI. *Amer J Phys Anthropol* Suppl 40:176.
- Hill, CA, RH Reeves, JT Richtsmeier 2005 Mandibular changes in a mouse model for craniofacial disorders. Presented at the annual meeting of the American Association of Physical Anthropology, Milwaukee, WI. *Amer J Phys Anthropol* Suppl 40:115-116.
- Frazier, B, K Aldridge, JT Richtsmeier 2005 Sexual dimorphism and morphological integration in baboons. Presented at the annual meeting of the American Association of Physical Anthropology, Milwaukee, WI. *Amer J Phys Anthropol* Suppl 40:103.
- Aldridge, KA, RH Reeves, LL Baxter, LE. Olson, JT Richtsmeier 2005 Distinct brain phenotypes in three aneuploid mouse models with implications for Down syndrome brain phenotypes. Presented at Crossover 2005, University Park, PA.
- Cole, TM III, S Lele, JT Richtsmeier 2006 Model-based estimation of variance-covariance structure in landmark data, with a consideration of morphological integration in the *Macaca fascicularis* cranium. Presented at the

- annual meeting of the American Association of Physical Anthropology, Anchorage, AK. *Amer J Phys Anthropol* 129, Suppl 42:76.
- Miller, W, HA Lawson, A Nekrutenko, C Addo-quaye, A Buchanan, JT Richtsmeier, KM Weiss and the rhesus macaque genome sequencing consortium 2006 An analysis of human / chimpanzee / macaque orthologs. Presented at the annual meeting of the American Association of Physical Anthropology, Anchorage, AK. *Amer J Phys Anthropol* 129, Suppl 42:45.
- Richtsmeier JT, Weiss KM, Buchanan A, Walker A, Jablonski N, Frazier BC, Willmore KE, Lawson H, Yan P, Hill CA, Roseman CC, Cheverud JM, Falk D, Hildebolt CF, and Rogers J. Developmental genetic basis of primate craniofacial variation and human origins. 2007 *Amer J Phys Anthropol* 132(S44):198.
- Roseman CC, Willmore KE, Richtsmeier JT, Rogers J, Weiss KM, Walker A, Hildebolt CF, and Cheverud JM. The genetic basis of phenotypic integration in baboon and mouse craniomandibular morphology with implications for human cranial evolution. 2007 *Amer J Phys Anthropol* 132(S44):199.
- Willmore KE, Roseman CC, Cheverud JM, Frazier BC, Rogers J, Weiss KM, Walker A, Hildebolt CF, and Richtsmeier JT 2007. Genetic and phenotypic variation in craniofacial dimorphism in baboons. *Amer J Phys Anthropol* 132(S44):251.
- Liberton, DK, McEvoy B, Bauchet M, Hill CA, Richtsmeier JT, Frudakis T, Shriver MD 2007 Variation in facial features among European populations measured from 3D photographs. *Amer J Phys Anthropol* (S44):156.
- Willmore KE, HA Lawson, CC Roseman, JM Cheverud, JT Richtsmeier 2008 Comparison of phenotypic and genetic integration between mouse and baboon. *Amer J Phys Anthropol* (S46) :224.
- Starbuck, J, K Willmore, RH Reeves, JT Richtsmeier 2008 Quantitative comparison of midface morphology in Down syndrome individuals and unaffected siblings. *Amer J Phys Anthropol* (S46) :200.
- Frazier, B, KE Willmore, JT Richtsmeier 2008 Characterizing neurocranial shape in microcephalic children. *Amer J Phys Anthropol* (S46) : 99.
- Percival, C, CA Hill, M Sun, Y Wang, EW Jabs, JT Richtsmeier 2008 Phenotypic variation within and between 'genetically homogeneous' mouse litters. *Amer J Phys Anthropol* (S46) : 170.
- Percival C, M Chimera, K Kim, J Kenney-Hunt, A Conley, C O'Connor, C Roseman, J Cheverud, J Richtsmeier. 2009 A study of 2D landmark data accuracy in representing 3D mouse skull form. *American Journal of Physical Anthropology* (S48):209.
- Frazier BC, JT Richtsmeier 2009. Craniofacial shape and allometry in sister taxa of disparate body sizes: Nasalis larvatus and Simias concolor. Presented at the 78th annual meetings of the American Association of Physical Anthropologists, Chicago, IL. *Amer J Phys Anthropol Suppl* 48:129.
- Starbuck J, RH Reeves, JT Richtsmeier 2009 Morphological Integration of the Down Syndrome Face. *Amer J Phys Anthropol Suppl* 48: 246.
- Rogers, J, JM Cheverud, J Joganic, K Willmore, JT Richtsmeier, C Roseman 2009 Quantitative genetic analysis of primate cranial morphology: Cayo Santiago and beyond. *Amer J Phys Anthropol* 138(S48):316.
- Percival, C, K Willmore, S. Sirivunnabood, J Rogers, J Cherverud, A Buchanan, K Weiss, J Richtsmeier 2010 Morphological changes associated with tooth loss and alveolar resorption in male baboons. *Amer J Phys Anthropol* S50: 187-188.
- Hill, CA, JR Austin, JT Richtsmeier, Y Wang, EW Jabs, K Aldridge 2010 Patterns of morphological integration in the newborn brain. *Amer J. Phys. Anthropol* S50: 128.
- Héuzé, Y, SA Boyadjiev, JT Richtsmeier 2010 The premature closure of the sagittal suture and its consequences on human skull shape: new findings and hypotheses. *Amer J Phys Anthropol* S50:127.
- Aldridge, KA, Y Héuzé, C Percival, J Stella, LG Howell, I George, JL Marsh, A Kane, TM Ryan, JT Richtsmeier 2010 The relationship between hard and soft tissue: lessons for reconstructing virtual endocasts. *Amer J Phys Anthropol* S50:53.
- Neuberger, T, KA Aldridge, CA Hill, JR Austin, TM Ryan, C Percival, N Martínez-Abadías, Y Wang, EW Jabs, AG Webb, JT Richtsmeier 2010 Magnetic Resonance Microscopy and Micro Computed Tomography of Brain Phenotypes of Two FGFR2 Mouse Models for Apert Syndrome. 2364, Proc. 18th ISMRM, Stockholm, Sweden.
- Richtsmeier, JT, N Martínez-Abadías, C Percival, T Ryan, T Neuberger, K A;dridge, C Hill, Y Wang, E Wang Jabs 2010 Morphological variance and invariance in the heads of Fgfr+/S252W and Fgfr2+/P253R Apert syndrome mice. Gordon Research Conference on Craniofacial morphogenesis and tissue regeneration. April, Lucca, Italy

- Martínez-Abadías, N, C Percival, K Aldridge, C Hill, T Ryan, Y Wang, M Sun, V Ulhorn, EW Jabs, JT Richtsmeier 2010 From genetic mutation to a range of phenotypic variation: craniofacial shape in Apert syndrome mouse models. Gordon Research Conference on Craniofacial morphogenesis and tissue regeneration. Apr 14-16, Lucca, Italy
- Richtsmeier, JT, Neus Martinez-Abadias, Kristina Aldridge Christopher Percival, Timothy Ryan, Thomas Neuberger, Yingli Wang, Ethylin Wang Jabs 2010 Phenotypic variance, invariance and integration in the heads of Apert syndrome mouse models. European Evolutionary Development Society, Paris, July.
- Martínez-Abadías, N, P Mitteroecker, T Parsons, E Mireia, T Sjøvold, C Rolian, JT Richtsmeier, B Hallgrímsson 2010 Correspondence of developmentally determined craniofacial variation in human and mice. European Evolutionary Development Society, Paris, July.
- Richtsmeier, JT, N Martínez-Abadías, K Aldridge, C.A. Hill, A Buchanan, K Weiss, C J Percival, T Ryan, T Neuberger, Y Wang, EW Jabs 2010 Morphological variance, invariance and integration in the heads of *Fgfr2^{+S252W}* and *Fgfr2^{+P253R}* Apert syndrome mice. European Evolutionary Development Society, Paris, July.
- Martínez-Abadías N, Y Wang, EW Jabs, T Ryan, JT Richtsmeier 2010. Effect of FGFR2 mutations on patterns of morphological integration in the skulls of Apert syndrome mouse models. 33rd Meeting of the Society of Craniofacial Genetics. Bethesda, MD. (abstract published *Amer J Med Genet Part A* 155:284)
- Heuzé Y, Martínez-Abadías N, Stella JM, Boyadjiev SA, Richtsmeier JT. 2011. Do left and right unilateral coronal craniosynostoses result from the same biological processes? 33rd Meeting of the Society of Craniofacial Genetics. Bethesda, MD. (abstract published *Amer J Med Genet Part A* 155:282)
- Wang, Y., X Zhou, K Oberoi, J Friedenthal, C J Percival, DL Huso, JT Richtsmeier and EW Jabs 2010 Characterization and treatment of Beare Stevenson syndrome *Fgfr2 +/Y394C* mouse model. Society of Craniofacial Genetics. (abstract published *Amer J Med Genet Part A* 155:283)
- Heuzé Y, N Martínez-Abadías, JT Richtsmeier 2011 Morphological integration and modularity of the skull: lessons from craniosynostosis. *Annual Meeting the Anthropological Society of Paris, Paris, France.*
- Starbuck, J, R. Reeves, J. Richtsmeier 2011 Morphological integration of the face in Down syndrome individuals and siblings. *Amer J Phys Anthropol* 552:283.
- Sol, K, E Gioan, G Subsol, Y Heuze, J Richtsmeier, J Braga, F Thackeray 2011 A new 3D morphometric method based on a combinatorial encoding of 3D point configurations: application to skull anatomy for clinical research and physical anthropology. *Amer J Phys Anthropol* 552:280.
- Lambi, AG, TL Pankratz, H Hendsi, R Razmpour, RA Pixley, MF Barbe, JT Richtsmeier, FS Safadi, SN Popoff 2011 Connective tissue growth factor (CTGF/CCN2) is required for normal intramembranous and endochondral ossification. International CCN Society annual meeting, Vancouver, September.
- Lambi, AG, TL Pankratz, H Hendsi, R Razmpour, RA Pixley, MF Barbe, JT Richtsmeier, FS Safadi, SN Popoff 2011 Connective tissue growth factor (CTGF/CCN2) is required for normal intramembranous and endochondral ossification. Orthopedic Research Society annual meeting, San Francisco, CA.
- Ye, X, A Guilmatre, EW Jabs, Y Heuze, JT Richtsmeier, CM Druschel, PA Romitti 2011 Candidate genes analysis of nonsyndromic sagittal craniosynostosis. 34th Meeting of the Society of Craniofacial Genetics. (abstract published *Amer J Med Genet Part A*).
- Motch, S, N Martínez-Abadías, T Pankratz, Y Wang, K Aldridge, EW Jabs, T Neuberger, TM Ryan, JT Richtsmeier 2011 Reading between the lines: the development of negative spaces in a Crouzon syndrome mouse model at birth. 34th Meeting of the Society of Craniofacial Genetics. (abstract published *Amer J Med Genet Part A*).
- Hill, CA, JR Austin, JT Richtsmeier, S Motch, N Martinez-Abadias, Y Wang, EW Jabs, K Aldridge 2011 Growth of the skull and brain in a mouse model for Apert syndrome. 34th Meeting of the Society of Craniofacial Genetics. (abstract published *Amer J Med Genet Part A*).
- Percival, C, Y Wang, X Zhou, EW Jabs, JT Richtsmeier 2011 Alterations in postnatal craniofacial bone mineral density and volume in the *Fgfr2Y394C/+* Beare-Stevenson cutis gyrata syndrome mouse model. 34th Meeting of the Society of Craniofacial Genetics. (*Amer J Med Genet Part A*).
- Martínez-Abadías, N, Y Heuzé, Y Wang, S Motch, T Pankratz, JM Stella, G García Fructuoso, M Alamar, F Di Rocco, C Collet, L-J Lo, SA Boyadjiev, EW Jabs, JT Richtsmeier 2011 Phenotypic continuum in FGFR syndromic craniosynostosis? Evidence from human patients and mouse models. 34th Meeting of the Society of Craniofacial Genetics. (abstract published *Amer J Med Genet Part A*).
- Heuzé, Y, N Martínez-Abadías, JM Stella, F Di Rocco, C Collet, G García Fructuoso, M Alamar, L-J Lo, SA Boyadjiev, JT Richtsmeier 2011 Is the craniofacial phenotype sufficient to characterize FGFR-related

- craniosynostosis syndromes? 34th Meeting of the Society of Craniofacial Genetics. (abstract published *Amer J Med Genet Part A*).
- Aldridge, K JR Austin, E Smallmon, R Desai, LG Howell, M Brandon, Y Wang, EW Jabs, S Motch, JT Richtsmeier, PhD 2012 Brain phenotypes in the FGFR2 C342Y mouse model for syndromic craniosynostosis. Presented at the 69th Annual meeting of the American Cleft Palate-Craniofacial Association, San Jose, CA.
- Joganic, JL, KE Willmore, JT Richtsmeier, J Rogers, JM Cheverud 2012 Ligers and tignons and pizzlies, oh my!: the morphological consequences of intergenic hybridization in the cranium of a rheboon (*Macaca mulatta* x *Papio hamadryas*). *Amer J Phys Anthropol* 147, S54 :175
- Smallmon, EN, JR Austin, RJ Desai, LG Howell, KK Cole, ID George, JL Marsh, AA Kane, J Panchal, JT Richtsmeier, K Aldridge 2012 Developmental instability and fluctuating asymmetry in the infant brain. 81st annual meeting of AAPA, Portland, OR; abstract published *Amer J Phys Anthropol* 147, S54 :271-272
- Desai, RJ, JR Austin, EN Smallmon, LG Howell, KK Cole, ID George, JL Marsh, AA Kane, J Panchal, JT Richtsmeier, K Aldridge 2012 Patterns of morphological integration in the brain in infants with craniosynostosis. 81st annual meeting of AAPA, Portland, OR; abstract published *Amer J Phys Anthropol* 147, S54 : 129
- Howell, LG, JR Austin, RJ Desai, KK Cole, EN Smallmon, CA Hill, ID George, JT Richtsmeier, JL Marsh, AA Kane, J Panchal, K Aldridge 2012 Congruence of brain and skull in endocast reconstruction of the infant brain. 81st annual meeting of AAPA, Portland, OR; abstract published *Amer J Phys Anthropol* 147, S54 : 169
- Starbuck, JM, RH Reeves, TM Cole, III, JT Richtsmeier 2012 Developmental instability in the Down syndrome face. 81st annual meeting of AAPA, Portland, OR; abstract published *Amer J Phys Anthropol* 147, S54 :277.
- Heuzé, Y, N Martínez-Abadías, JM Stella, F DiRocco, C Collet, G García Fructuoso, M Alamar, L Lo, SA Boyadjiev, JT Richtsmeier 2012 Craniofacial phenotypic variation in craniosynostosis syndromes: the face makes the difference. 81st annual meeting of AAPA, Portland, OR; abstract published *Amer J Phys Anthropol* 147, S54 :165.
- Motch, S, T Neuberger, N Martínez-Abadías, T Pankratz, Y Wang, K Aldridge, EW Jabs, TM Ryan, JT Richtsmeier 2012 Quantitative examination of negative spaces in a Crouzon/Pfeiffer mouse model at birth using multimodal imaging. Presented at the International Society for Magnetic Resonance in Medicine, Melbourne, Australia, May.
- Lambi, A, C Mundy, TL Pankratz, JT Richtsmeier, S Popoff 2012 Defective craniofacial development and bone formation in CTGF knockout mice. Presented at the annual meetings of the American Society for Bone and Mineral Research, Minneapolis, October.
- Percival, C, K Kawasaki, T Pankratz, EW Jabs, K Weiss, JT Richtsmeier 2012 The influence of endothelial expression of an Apert syndrome mutation on craniofacial bone development. Presented at the 25th Annual Mouse Molecular Genetics Conference, Asilomar, CA, October.
- Justice, CM, G Yagnik, Y Kim, I Peter, EW Jabs, M Erazo, X Ye, L Shi, M L Cunningham, V Kimonis, T Roscioli, SA Wall, AOM Wilkie, J Stoler, JT Richtsmeier, Y Heuzé, PA Sanchez-Lara, MF Buckley, CM Druschel, JL Mills, M Caggana, PA Romitti, DM Kay, C Senders, PJ Taub, OD Klein, J Boggan, M Zwienenberg-Lee, C Naydenov, J Kim, AF Wilson, SA Boyadjiev 2012 A genome-wide association study identifies risk loci for non-syndromic sagittal craniosynostosis on chromosomes 20 and 7. Presented at David Smith's meeting, Lake Lanier, GA
- Justice, CM, G Yagnik, Y Kim, I Peter, EW Jabs, M Erazo, X Ye, L Shi, M L Cunningham, V Kimonis, T Roscioli, SA Wall, AOM Wilkie, J Stoler, JT Richtsmeier, Y Heuzé, PA Sanchez-Lara, MF Buckley, CM Druschel, JL Mills, M Caggana, PA Romitti, DM Kay, C Senders, PJ Taub, OD Klein, J Boggan, M Zwienenberg-Lee, C Naydenov, J Kim, AF Wilson, SA Boyadjiev 2012 A genome-wide association study identifies risk loci for non-syndromic sagittal craniosynostosis on chromosomes 20 and 7. Presented at the European Society for Genetics annual meeting.
- Percival C, A Winkler, K Kawasaki, T Pankratz, EW Jabs, JT Richtsmeier 2013 Influence of angiogenesis on craniofacial bone morphology. 82nd annual meeting of the American Association of Physical Anthropologists, Knoxville.
- Percival CJ, T Pankratz, Y Huang, X Zhou, EW Jabs, R Li, JT Richtsmeier 2013 Early craniofacial bone growth and maturation of Fgfr2+/P253R mice and littermates. American Association of Anatomists meeting at Federation of American Societies for Experimental Biology 2012, San Diego, April. Abstract #963.10

- Aldridge, K, JR Austin, SM Motch, T Neuberger, EW Jabs, JT Richtsmeier 2013 Late prenatal brain growth patterns differ in two mouse models for Apert syndrome. Presented at the 12th International Congress on Cleft Lip/Palate and Related Craniofacial Anomalies, Orlando, FL.
- Richtsmeier, JT, K Aldridge, SM Motch, CJ Percival, N Martínez-Abadías, Y Heuzé, C Hill, Y Wang, G Holmes, EW Jabs 2013 Craniofacial phenotypes in the FGFR-related craniosynostosis syndromes. Presented at the 12th International Congress on Cleft Lip/Palate and Related Craniofacial Anomalies, Orlando, FL.
- Reeves, RH et al. 2013 DS360: Establishing a comprehensive genotype - phenotype study of Down syndrome. Workshop on Cognition in Down Syndrome - Molecular, Cellular and Behavioral Features and the Promise of Pharmacotherapies, Washington, D.C., April (Richtsmeier's role is team leader of the DS Face Project).
- Motch Perrine, S, T Pankratz, EW Jabs, JT Richtsmeier 2013 Effects of FGF-FGFR signaling on mandibular variation in four craniosynostosis models. *35th Meeting of the Society of Craniofacial Genetics*, Boston, MA. (abstract published *Amer J Med Genet Part A*).
- Dutka, T, N Singh, JT Richtsmeier, R Reeves 2013 Effects of up-regulation of the SHH pathway on Ts65Dn, a mouse model of Down syndrome. Presented at the American Society of Human Genetics annual meeting, Boston, MA.

Publications

- Richtsmeier, JT, JM Cheverud, JE Buikstra 1984 The relationship between cranial metric and non-metric traits in the rhesus macaques from Cayo Santiago. *Amer. J. Phys. Anthropol.*, 64: (3) 213-222. PMID: 6476098
- Sade, DS, BD Chepko-Sade, JM Schneider, S Roberts, JT Richtsmeier 1985 *Basic Demographic Observations on Free-Ranging Rhesus Monkeys*. Human Relations Area Files, Multimedia Publications, New Haven.
- Richtsmeier, JT and JW McGrath 1986 Quantitative genetics of cranial nonmetric traits in randombred mice: heritability and etiology. *Amer. J. Phys. Anthropol.* 69: (1) 51-58. PMID: 3946596
- Richtsmeier, JT and JM Cheverud 1986 Finite element scaling analysis of normal growth of the human craniofacial complex. *J. Craniofac. Genet. Dev. Biol.*, 6: (3) 289-323. PMID: 3771738
- Cheverud, JM and JT Richtsmeier 1986 Finite element scaling applied to sexual dimorphism in rhesus macaque (*Macaca mulatta*) facial growth. *Syst. Zool.*, 35: (3) 109-128.
- Richtsmeier, JT 1987 A comparative study of normal, Crouzon and Apert craniofacial morphology using finite-element scaling analysis. *Amer. J. Phys. Anthropol.* 74:473-493. PMID: 3442299
- Richtsmeier, JT 1988 Craniofacial growth in Apert syndrome as quantified by finite-element scaling analysis. *Acta Anatomica* 133:50-56. PMID: 3213406
- Richtsmeier, JT and JM Cheverud 1989 Sexual Dimorphism of facial growth in *Macaca mulatta* and *M. fascicularis*. Proceedings of the 2nd International Symposium on Vertebrate Morphology. *Fortschritte der Zoologie*, Vol. 35: 438-440. Splechtna and H. Hilgers, editors.
- Richtsmeier, JT, GR Morris, C Hildebolt, MW Vannier 1989 Application of finite-element scaling analysis in the study of growth. *National Computer Graphics Conference Proceedings*, vol. I., pp. 199-206.
- Richtsmeier, JT 1989 Applications of finite element scaling analysis in primatology. *Folia primatologica* 53:50-64. PMID: 2606398
- Kaye, CI, BR Rollnick, WW Hauck, AO Martin, JT Richtsmeier, K Nagatoshi 1989 Microtia and associated anomalies: statistical analysis. *Am. J. Med. Genet.* 34: (4) 574-578. PMID: 2624271
- Richtsmeier, JT and S Lele 1990 Analysis of craniofacial growth in Crouzon syndrome using landmark data. *J. Craniofac. Genet. Dev. Biol.* 10: (1) 39-62. PMID: 2373755
- Lele, S and JT Richtsmeier 1990 Statistical models in morphometrics- are they realistic? *Syst. Zool.* 39: (1) 60-69.
- Richtsmeier, JT, JM Cheverud, GR Morris 1990 Comparison of three-dimensional form. *J. of Anat.* 170:221-223.
- Richtsmeier, JT 1990 Quantitative analysis of three-dimensional data. *Society of Photo-Optical Instrumentation Engineers Conference (SPIE) Proceedings* 1380:49-60.
- Richtsmeier, JT, GR Morris, JL Marsh, MW Vannier 1990 The biological implications of varying element design in finite-element scaling analyses of growth. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, 12: (1) 387-388.
- Leakey, MG, RE Leakey, JT Richtsmeier, EL Simons, AC Walker 1991 Morphological similarities in *Aegyptopithecus* and *Afropithecus*. *Folia Primatologica* 56: (2)65-85. PMID: 1904388

- Richtsmeier, JT, HM Grausz, GR Morris, JL Marsh, MW Vannier 1991 Growth of the cranial base in craniosynostosis. *Cleft Palate Craniofac. J.* 28: (1) 55-67. PMID: 2004097
- Corner, BD and JT Richtsmeier 1991 Morphometric analysis of craniofacial growth in *Cebus apella*. *Amer. J. Phys. Anthropol.* 84:(3) 323-342. PMID: 2024716
- Wong, L, CR Dufresne, JT Richtsmeier, PM Manson 1991 The effect of rigid fixation on growth of the neurocranium. *Plast. Reconstr. Surg.* 88:(3) 395-403. PMID: 1871215
- Grausz, HM, JT Richtsmeier, ML Oster-Granite 1991 Morphogenesis of the brain and craniofacial complex in trisomy 16 mice. In *The morphogenesis of Down Syndrome, Progress in clinical and biological research*, vol. 373, C.J. Epstein, editor. Wiley-Liss, New York. Pp.169-188. PMID: 1780330
- Cheverud, JM, S Hartman, JT Richtsmeier, WR Atchley 1991 A quantitative genetic analysis of localized morphology in mandibles of inbred mice using finite element scaling analysis. *J. Craniofac. Genet. Dev. Biol.* 11:(3)122-137. PMID: 1761645
- Lele, S and JT Richtsmeier 1991 Euclidean distance matrix analysis: a coordinate-free approach for comparing biological shapes using landmark data. *Amer. J. Phys. Anthropol.* 86:(3)415-427. PMID: 1746646
- Dufresne, CR, B Corner, JT Richtsmeier 1992 Categorization of craniofacial dysmorphology for the prediction of surgical outcome. In *Craniofacial Surgery: Proceedings of the fourth meeting of the International Society of Cranio-maxillo-facial surgery*. Monduzzi Editore, Bologna, Italy, pp. 41-45.
- Lele, S and JT Richtsmeier 1992 On comparing biological shapes- detection of influential landmarks. *Amer. J. Phys. Anthropol.* 87:(1) 49-65. PMID: 1736674
- Corner, BD and JT Richtsmeier 1992 Cranial growth in the squirrel monkey (*Saimiri sciureus*)- a quantitative analysis using three dimensional coordinate data. *Amer. J. Phys. Anthropol.* 87:(1) 67-81. PMID: 1736675
- Corner, BD and JT Richtsmeier 1992 Experiments in nature- premature unicoronal cranial synostosis in mantled howler monkeys (*Alouatta palliata*). *Cleft Palate Craniofac. J.* 29:(2) 143-151. PMID: 1571347
- Richtsmeier, JT, JM Cheverud, S Lele 1992 Advances in anthropological morphometrics. *Ann. Rev. Anthropol.* 21: 231-253.
- Richtsmeier, JT 1992 Evolutionary biology and development and dysmorphology. In, *Complex facial problems*, C.R. Dufresne and B. Carson, editors, Churchill-Livingstone, New York. Pp. 13-26.
- Corner, BD, SL Lele, JT Richtsmeier 1992 Measuring precision of three-dimensional landmark data. *Quantitative Anthropol.* 3:(4) 347-359.
- Kaye, C, A Martin, B Rollnick, K Nagatoshi, J Israel, M Haermanoff, B Tropea, J Richtsmeier, NE Morton 1992 Oculoauriculovertrebral anomaly: segregation analysis. *Amer. J. Med. Genet.* 43:(6) 913-917. PMID: 1415339
- Richtsmeier, JT and A Walker 1993 Morphometric analysis of facial growth in *Homo erectus*. In, *The Nariokotome Homo erectus skeleton*, R.E. Leakey and A. Walker, eds., Harvard University Press. Pp. 391-410.
- Richtsmeier, JT, JM Cheverud, SM Danahey, BC Corner, S Lele 1993 Sexual dimorphism of ontogeny in the crab eating macaque (*Macaca fascicularis*). *Journal of Human Evolution*, 25:(1) 1-30.
- Richtsmeier, JT and S Lele 1993 A coordinate-free approach to the analysis of growth patterns: models and theoretical considerations. *Biological Reviews* 68:(3) 381-411. PMID: 8347767
- Richtsmeier, JT, BD Corner, HM Grausz, JM Cheverud, S Danahey 1993 The role of postnatal growth pattern in the production of facial morphology. *Systematic Biology* 42:(3) 307-330.
- Richtsmeier, JT 1993 Beyond morphing: visualization to predict a child's skull growth. *Advanced Imaging* 8: (7) 24-27.
- Corner, BD and JT Richtsmeier 1993 Cranial growth and growth dimorphism in *Ateles geoffroyi*. *Amer. J. Phys. Anthropol.* 92:(3) 371-394. PMID: 8291622
- Wong, L, JT Richtsmeier, PN Manson 1993 Craniofacial growth following rigid fixation: suture excision, miniplating, and microplating. *The Journal of Craniofacial Surgery* 4:(4) 234-244. PMID: 8110905
- Richtsmeier, JT, GH Sack, Jr., HM Grausz, LC Cork 1994 Cleft palate with autosomal recessive transmission in Brittany Spaniels. *Cleft Palate-Craniofacial J* 31:(5) 364-371. PMID: 7986797
- Ohman, J and JT Richtsmeier 1994 Perspectives on craniofacial growth. In *Clinics in Plastic Surgery* 21:(4) 489-499. PMID: 7813150
- Dufresne, C and JT Richtsmeier 1995 Interaction of craniofacial dysmorphology, growth, and the prediction of surgical outcome. *J. of Craniofacial Surg.* 6 : (4) 270-281. PMID: 9020701
- Dufresne, CR, R Raghavan, S. Fang, JT Richtsmeier 1995 Computerized dynamic skeletal modeling for craniofacial surgical planning: new tools to predict growth following surgery. In *Craniofacial Surgery*:

- Proceedings of the VIth Congress of the International Society of Craniofacial Surgery.* Daniel Marchac, Editor. Monduzzi Editore, Bologna. Pp.31-32.
- Richtsmeier, JT, C Paik, P Elfert, T Cole, HR Dahlman 1995 Precision, repeatability and validation of the localization of cranial landmarks using computed tomography scans. *Cleft Palate-Craniofacial Journal* 32: (3)217-227. PMID: 7605789
- Lele, S and JT Richtsmeier 1995 Euclidean Distance Matrix Analysis- confidence intervals for form and growth comparison. *Amer. J. Phys. Anthropol.* 98: (1) 73-86. PMID: 8579192
- Fang, S, R Raghavan, JT Richtsmeier 1996 Volume morphing methods for landmark based 3D image deformation. *Proc. 1996 SPIE Medical Imaging*, pp. 404-415. Newport Beach, CA.
- Shapiro, D and Richtsmeier, JT 1997 Brief communication: a sample of pediatric skulls available for study. *Amer. J. of Phys. Anthropol.* 103: (3) 415-416. PMID: 9261504
- Richtsmeier, JT, T Cole, CJ Valeri, G Krovitz S Lele 1998 Pre-operative morphology and development in sagittal synostosis. *J. Craniof. Genet. Devel. Biol.*, 18: (2) 64-78. PMID: 9672839
- Cole, T.M.III and JT Richtsmeier 1998 A simple method for visualization of influential landmarks when using Euclidean Distance Matrix Analysis. *Amer J of Phys Anthropol*, 107: (3) 273-283.
- Valeri, C, TM Cole, III, S Lele, JT Richtsmeier 1998 Capturing data from three-dimensional surfaces using fuzzy landmarks. *Amer J of Phys. Anthropol.* 107:(1) 113-124.
- Burrows, AM, JT Richtsmeier, MP Mooney, TD Smith, HW Losken, MI Siegel 1999 Three-dimensional analysis of craniofacial form in a familial rabbit model of nonsyndromic coronal synostosis using Euclidean distance matrix analysis. *Cleft palate-Craniofacial Journal* 36:(3) 196-206.
- Zumpano, MP, BS Carson, JL Marsh, CA VanderKolk, JT Richtsmeier 1999 A three-dimensional morphological analysis of isolated metopic synostosis. *The Anatomical Record*, 256:1-12.
- Fang, S, R Srinivasan, R Raghavan, JT Richtsmeier 2000 Volume Morphing and Rendering -- An Integrated Approach. *Journal of Computer Aided Geometric Design*, 17:(1) 59-81.
- Baxter, LL, TH Moran, JT Richtsmeier, J Troncoso, RH Reeves 2000 Discovery and genetic localization of Down syndrome cerebellar phenotypes using the Ts65Dn mouse. *Human Molecular genetics*, 9:(2) 195-202.
- Richtsmeier, JT, LL Baxter, RH Reeves 2000 Parallels of craniofacial maldevelopment in Down syndrome and Ts65Dn mice. *Developmental Dynamics*, 217:137-145.
- DeLeon, VB, EW Jabs, JT Richtsmeier 2000 Craniofacial growth: genetic basis and morphogenetic process in craniosynostosis. In *Plastic Surgery: Indications, Operations, Outcomes*, Achauer, et al., eds., Vol. Two, Part 1, Chapter 42, pp 619-636. Mosby-Yearbook, Inc.
- Reeves, RH, LL Baxter, JT Richtsmeier 2001 Too much of a good thing- understanding effects of gene dosage in Down Syndrome. *Trends in genetics*, 17: (2) 79-84.
- Lele, S. and JT Richtsmeier 2001 *An invariant approach to statistical analysis of shapes*. Interdisciplinary studies in statistics series. Chapman and Hall-CRC press, London. 308 pages.
- DeLeon, VB, M Zumpano, JT Richtsmeier 2001 The effect of neurocranial surgery on basicranial morphology in isolated sagittal craniosynostosis. *Cleft Palate-Craniofacial J* 38(2): 134-146. PMID: 11294541
- Cole, TM, III, S Lele, JT Richtsmeier 2002 A parametric bootstrap approach to the detection of phylogenetic signals in landmark data. In MacLeod N & Forey P (eds.): *Morphometrics, Shape, and Phylogenetics*. London: Taylor and Francis. Pp. 194-219.
- Richtsmeier, JT, A Zumwalt, E Carlson, CJ Epstein, RH Reeves 2002 Craniofacial phenotypes in segmentally trisomic mouse models for Down Syndrome. *Amer. J. Med. Genetics* 107(4): 317-324. PMID: 11840489
- Richtsmeier, JT 2002 Cranial Vault Morphology and Growth in Craniosynostoses. In: Mooney, M.P., and Siegel, M.I. (eds.) *Understanding Craniofacial Anomalies: The Etiopathogenesis of Craniosynostoses and Facial Clefting*. New York:Wiley-Liss. Pp. 321-341.
- Aldridge, KA, JL Marsh, D Govier, JT Richtsmeier 2002 Central nervous system phenotypes in craniosynostosis. *J of Anatomy* 201: 31-39. PMID: PMC1570892
- Richtsmeier, JT, VB DeLeon, S Lele 2002 The promise of geometric morphometrics. *Yearbook of Physical Anthropology* 45: 63-91. PMID: 12653309
- Richtsmeier, JT 2003 Growth. In *Key Concepts and Approaches in Evolutionary Developmental Biology*, BK Hall and W Olson, eds. Harvard University Press, Pp. 161-168.

- Zumpano, M and JT Richtsmeier 2003 Growth-related shape changes in the fetal craniofacial complex of humans (*Homo sapiens*) and pigtailed macaques (*Macaca nemestrina*): A 3D-CT comparative analysis. *Amer. J. Phys. Anthropol*, 120(4): 339-351. PMID: 12627529
- Williams, FL and JT Richtsmeier 2003 Comparison of mandibular landmarks from computed tomography and 3D digitizer data. *Clinical Anatomy*, 16(6): 494-500. PMID: 14566895
- Olsen, L, JT Richtsmeier, J Leszl, RH Reeves 2004 A chromosome 21 critical region does not cause specific Down syndrome phenotypes. *Science*, 306: 687-690. PMID: 15499018
- Richtsmeier, JT, S. Lele, TM Cole, III 2005 An invariant approach to the study of fluctuating asymmetry : developmental instability in a mouse model for Down syndrome. In, *Modern Morphometrics in Physical Anthropology*, D Slice, Ed., Kluwer Academic/Plenum Publishers Series, *Developments in Primatology: Progress and Prospects*, RH Tuttle, Ed., Pp. 187-212.
- Richtsmeier, JT, TM Cole, III, S Lele 2005 Landmark morphometrics and the analysis of variation. In, *Variation: A Central Concept in Biology*, B Hallgrímsson and BK Hall, eds., Elsevier Academic Press, Boston,. Pp 49-68.
- Aldridge, K, AA Kane, JL Marsh, D Govier, JT Richtsmeier 2005 Relationship of brain and skull in pre- and post operative sagittal synostosis. *J of Anatomy*, 206 (4) 373-385. PMCID: PMC1571486
- Aldridge, K, AA Kane, JL Marsh, J Panchal, SA Boyd, P Yan, D Govier, W Ahmad, JT Richtsmeier 2005 Brain morphology in non-syndromic unicoronal craniosynostosis. *Anat Rec A Discov Mol Cell Evol Biol* 285:690-698. PMID: 15977220
- Wang, Y, R Xiao, F Yang, BO Karim, AJ Iacovelli, J Cai, CP Lerner, JT Richtsmeier, JM Leszl, CA Hill, K Yu, DM Ornitz, J Elisseeff, DL Huso, EW Jabs 2005 Abnormalities in cartilage and bone development in the Apert syndrome *FGFR2^{+/S252W}* mouse. *Development*, 132: 3537-3548. PMID: 15975938
- Aldridge KA, SA Boyadjiev, Boyd, GT Capone, VB DeLeon, JT Richtsmeier 2005 Precision and error of three-dimensional phenotypic measures acquired from 3dMD photogrammetric images. *Amer. J. Med. Genet*, 138A:247-253. PMID: 16158436
- Richtsmeier JT, KA Aldridge, VB DeLeon, J Panchal, AA Kane, JL Marsh, P Yan, TM Cole III 2006 Phenotypic integration of neurocranium and brain. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*, 306B:360-378. PMCID: PMC2752667
- Kane AA, VB DeLeon, C Valeri, DB Becker, JT Richtsmeier, L-J Lo 2007 Preoperative Osseous Dymorphology in Unilateral Complete Cleft Lip and Palate: A Quantitative Analysis of CT Data. *Plastic and Reconstructive Surgery* 119: 1295-301. PMID: 17496604
- Parsons T, TM Ryan, RH Reeves, JT Richtsmeier 2007 Microstructure of trabecular bone in a mouse model for Down syndrome. *Anatomical Record* 290(4):414-421. PMID: 17514765
- Aldridge KA, RH Reeves, LE Olson, JT Richtsmeier 2007 Differential effects of trisomy on brain shape and volume in related aneuploid mouse models. *Amer. J. Med. Genet.*, 143A:1060-1070. PMID: 17431903
- Hill CA, RH Reeves, JT Richtsmeier 2007 Effects of aneuploidy on skull growth in a mouse model of Down syndrome. *J. Anat.*, 210(4): 394-405. PMCID: PMC2100298
- Committee for the Assessment of the NIOSH Head and Face Anthropometric Survey of U.S. Respirator Users 2007 *Assessment of the NIOSH Head-and-Face Anthropometric Survey of U.S. respirator Users*. J C Bailar III, EA Meyer, R Pool, Eds., The National Academies Press (Richtsmeier is a member of the authoring committee).
- Willmore, KE, NM Young, JT Richtsmeier 2007 Phenotypic variability: its components, measurement, and underlying developmental mechanisms. *Evolutionary Biology*, 34(3-4): 99-120.
- Weinberg S, K Neiswanger, JT Richtsmeier, BS Maher, MP Mooney, MI Siegel, ML Marazita 2008 Three-dimensional morphometric analysis of craniofacial shape in the unaffected relatives of individuals with nonsyndromic orofacial clefts: a possible marker for genetic susceptibility. *Amer J Med Genet Part A*, 146(1):409-420. PMID: 18203157
- Hill, CA, JT Richtsmeier 2008 A quantitative method for the evaluation of three-dimensional structure of temporal bone pneumatization. *J Hum Evol*, 55:682-690. PMCID: PMC2837910
- Frazier BC, MP Mooney, HW Losken, T Barbano, A Moursi, MI Siegel, JT Richtsmeier 2008 Comparison of craniofacial phenotype in craniosynostotic rabbits treated with anti-Tgf- β 2 at suturectomy site. *Cleft palate-craniofacial Journal*, 45(6): 571-582. PMCID: PMC2836716
- DeLeon, VB and JT Richtsmeier 2009 Fluctuating asymmetry and developmental instability in sagittal craniosynostosis. *Cleft palate-craniofacial Journal* 46(2): 187-196. PMCID: PMC2829315

- Buchanan, AV, S Sholtis, JT Richtsmeier, KM Weiss 2009 What are genes 'for' or where are traits 'from'? What is the question? *Bioessays*, 31:198-208. PMID: PMC2807122
- Richtsmeier, JT and VB DeLeon 2009 Morphological Integration of the skull in craniofacial anomalies. *Orthodontics and Craniofacial Research*, 12(3):149-158. PMID: PMC2804975
- Willmore, KE, CC Roseman, J Rogers, JT Richtsmeier, JM Cheverud 2009 Genetic variation in baboon craniofacial sexual dimorphism. *Evolution*, 63(3):799-806. PMID: PMC2836714
- Marcus, CL, RJH Smith, LA Mankarious, R Arens, GS Mitchell, R Gelluru, V Forte, S Goudy, EW Jabs, AA Kane, E Katz, D Paydarfar, K Pereira, RH Reeves, JT Richtsmeier, RL Ruiz, BT Thach, DE Tunkel, JA Whitsett, D Wootton, CJ Blaisdell 2009 Developmental Aspects of the Upper Airway. Report from an NHLBI Workshop, March 5-6, 2009. *Proceedings of the American Thoracic Society* 6:513-520. PMID: PMC3136952
- Hill, CA, TE Sussan, RH Reeves, JT Richtsmeier 2009 Complex contributions of *Ets2* to craniofacial and thymus phenotypes of trisomic "Down Syndrome" mice. *Am J Med Genet, Part A* 194: 2158-2165. PMID: PMC2903219
- Willmore, KE, CC Roseman, J Rogers, JM Cheverud, JT Richtsmeier 2009 Comparison of mandibular phenotypic and genetic integration between baboon and mouse. *Evolutionary Biology*, 36: 19-36.
- Aldridge, K, CA Hill, JR Austin, C Percival, N Martínez-Abadías, T Neuberger, Y Wang, EW Jabs, JT Richtsmeier 2010 Brain phenotypes in two FGFR2 mouse models for Apert syndrome. *Devel Dyn*, 239:987-997. PMID: PMC2829947
- Wang, Y, M Sun, V Uhlhorn, X Zhou, I Peter, N Martínez-Abadías, C A Hill, C J Percival, JT Richtsmeier, D L Huso, E W Jabs 2010 Activation of p38 MAPK pathway in the skull abnormalities of Apert syndrome *Fgfr2^{+/P253R}* mice. *BMC Developmental Biology*, 10:22 (22 Feb 2010). PMID: PMC2838826
- Heuzé, Y, SA Boyadjiev, JL Marsh, AA Kane, E Cherkez, JE Boggan, JT Richtsmeier 2010 New insights into the relationship between suture closure and craniofacial dysmorphology in sagittal nonsyndromic craniosynostosis. *J. Anatomy*, 217: 85-96. PMID: PMC2913018
- Roseman, CC, KE Willmore, J Rogers, C Hildebolt, BE Sadler, JT Richtsmeier, JM Cheverud 2010 Genetic and environmental contributions to variation in baboon cranial morphology. *Amer. J. Phys. Anthropol.* 143:1-12. PMID: PMC3258659
- Martínez-Abadías, N, C Percival, K Aldridge, CA Hill, T Ryan, S Sirivunnabood, Y Wang, EW Jabs, JT Richtsmeier 2010 Beyond the closed suture in Apert syndrome mouse models: evidence of primary effects of FGFR2 signaling on facial shape at birth. *Dev Dyn*, 239:3058-3071. PMID: PMC2965208
- Hill C, Vaddi S, Moffitt A, Kane A, Marsh J, Panchal J, Richtsmeier J, Aldridge K 2011 Intracranial volume and whole brain volume in infants with unicoronal craniosynostosis. *Cleft Palate Craniofac J* 48(4) 394-398. PMID: PMC3248228
- Percival, CJ, JT Richtsmeier 2011 The epigenetics of dysmorphology: craniosynostosis as an example. In *Epigenetics*, B Hallgrímsson and BK Hall, eds., U of California Press, Berkeley, Pp 377-397.
- Starbuck, JM, RH Reeves, JT Richtsmeier 2011 Morphological integration of soft-tissue facial morphology in Down syndrome individuals and their siblings. *Amer. J. Phys. Anthropol.*, 146: 560-568. PMID: PMC3258662.
- Heuzé, Y, N Martínez-Abadías, JM Stella, CW Senders, SA Boyadjiev, L-J Lo, JT Richtsmeier 2011 Unilateral and bilateral expression of a quantitative trait: asymmetry and symmetry in coronal craniosynostosis. *J Exp. Zool. B Mol Dev Evol* 318(2): 109-122. PMID: 22025321; PMID: PMC3315613.
- Martínez-Abadías, N, Y Heuzé, Y Wang, EW Jabs, K Aldridge, JT Richtsmeier 2011 FGF/FGFR signaling coordinates skull development by modulating magnitude of morphological integration: evidence from Apert syndrome mouse models. *PLoS ONE* 6(10): e26425. doi:10.1371/journal.pone.0026425. PMID: PMC3203899
- Willmore, KE, JE Buikstra, JM Cheverud, JT Richtsmeier 2012 Developmental origin of and covariation between metric and nonmetric cranial traits. In *Bones, Genetics, and Behavior of Rhesus Macaques: Macaca mulatta of Cayo Santiago and Beyond*, Life Science Series: Developments in Primatology: Progresses and Prospects, Springer, Series Editor - Louise Barrett; Editor - Qian Wang Pp. 61-84.
- Joganic, JL, KE Willmore, CC Roseman, JT Richtsmeier, J Rogers, JM Cheverud 2012 Comparative quantitative genetic analysis of cranial capacity and craniofacial morphology in two closely related primate species. In *Bones, Genetics, and Behavior of Rhesus Macaques: Macaca mulatta of Cayo Santiago and Beyond*, Life Science Series: Developments in Primatology: Progresses and Prospects, Springer, Series Editor - Louise Barrett; Editor - Qian Wang. Pp. 37-60.

- Wang, Y, X Zhou, K Oberoi, R Phelps, R Couwenhoven, M Sun, A Rezza, G Holmes, CJ Percival, J Friedenthal, P Krejci, JT Richtsmeier, DL Huso, M Rendl, EW Jabs 2012 p38 Inhibition ameliorates skin and skull abnormalities in *Fgfr2* Beare-Stevenson mice. *J Clinical Investigation*, 122(6):2153-2164. PMID: 22585574; PMCID:PMC3366414.
- Percival, CJ, Y Wang, X Zhou, EW Jabs, JT Richtsmeier 2012 The effect of a Beare-Stevenson syndrome *Fgfr2* Y394C mutation on early craniofacial bone volume and relative bone mineral density in mice. *J Anat*. 221(5):434-442. PMCID: PMC3482351
- Justice, CM, G Yagnik, Y Kim, I Peter, EW Jabs, M Erazo, X Ye, L Shi, M L Cunningham, V Kimonis, T Roscioli, SA Wall, AOM Wilkie, J Stoler, JT Richtsmeier, Y Heuzé, PA Sanchez-Lara, MF Buckley, CM Druschel, JL Mills, M Caggana, PA Romitti, DM Kay, C Senders, PJ Taub, OD Klein, J Boggan, M Zwienerberg-Lee, C Naydenov, J Kim, AF Wilson, SA Boyadjiev 2012 A genome-wide association study identifies susceptibility loci for non-syndromic sagittal craniosynostosis on chromosomes 20 and 7. *Nature genetics*, 44: 1360-1364. published online 18Nov2012; doi:10.1038/ng.2463. PMID:23160099; PMCID: PMC3736322.
- Lambi, A, T Pankratz, C Mundy, M Gannon, M Barbe, JT Richtsmeier, S Popoff 2012 The skeletal site-specific role of connective tissue growth factor (CTGF/CCN2) in skeletogenesis. *Devel Dyn*, 241:1944-1959. doi: 10.1002/dvdy.23888. Epub 2012 Nov 5. PMID: 23073844 PMCID in process.
- Martínez-Abadías, N, P Mitteroecker, TE Parsons, M Esparza, T Sjøvold, C Rolian, JT Richtsmeier, B Hallgrímsson 2012 The developmental basis of quantitative craniofacial variation in humans and mice. *Evol Biol* 39(4):554-567. Epub 2012 Nov 20. PMID: 23226904; PMCID: PMC3514712
- Martínez-Abadías, N, Motch, S, T Pankratz, Y Wang, K Aldridge, EW Jabs, JT Richtsmeier 2013 Tissue specific responses to aberrant Fgf signaling in complex head phenotypes. *Dev Dyn*, 242(1):80-94. Epub 2012 Dec 5. PMCID: PMC3556393
- Richtsmeier, JT 2013 Dymorphology. Entry 458, *Encyclopedia of Genetics*, 2nd edition, S Maloy and K Hughes, eds. Elsevier.
- Hill, CA, N Martínez-Abadías, SM Motch, JR Austin, Y Wang, EW Jabs, JT Richtsmeier, K Aldridge 2013 Postnatal brain and skull growth in an Apert syndrome mouse model. *Amer J Med Genet Part A*, 161(4):745-757, doi 10.1002/ajmg.a.35805. PMCID: PMC3606655
- Starbuck, JM, TM Cole, III RH Reeves, JT Richtsmeier 2013 Trisomy 21 and facial developmental instability. *Amer. J. Phys. Anthropol.*, 151(1):49-57. doi: 10.1002/ajpa.22255. PMID: 23505010; PMCID:PMC3744194.
- Martínez-Abadías, N, G Holmes, T Pankratz, Y Wang, X Zhou, EW Jabs, JT Richtsmeier 2013 From shape to cells: mouse models reveal mechanisms altering palate development in Apert syndrome. *Disease models and mechanisms* 6(3): 768-779. doi:10.1242/dmm.010397. PMID: 23519026; PMCID: PMC3634659.
- Richtsmeier, JT, K Flaherty 2013 Hand in glove: brain and skull in development and dysmorphogenesis. *Acta Neuropathol*, 125(4): 469-489, doi 10.1007/s00401-013-1104-y. PMID: 121975513; PMCID: PMC3652528.
- Percival, CJ, JT Richtsmeier 2013 Angiogenesis and intramembranous osteogenesis, *Dev Dyn*, 242(8):909-922. PMID: 23737393, PMCID:PMC3803110.
- Klein, OD, J Bush, S Knox, A Jheon, DR Cordero, JT Richtsmeier 2013 The society of craniofacial genetics and developmental biology 35th annual meeting. *Amer J Med Genet A* 161(12):2938-2952.
- Percival, C, Y Huang, EW Jabs, R Li, J T Richtsmeier 2013 Embryonic craniofacial bone volume and bone mineral density in *Fgfr2*^{P253R} and nonmutant mice. *Dev Dyn* 243(4): 541-55. PMID: 24504751 PMCID: PMC3998671.
- Heuzé, Y, N Martínez-Abadías, J Stella, E Arnaud, C Collet, G García Fructuoso, M Alamar, L-J Lo, S Boyadjiev, JT Richtsmeier 2014 Quantification of facial skeletal shape variation in FGFR-related craniosynostosis syndromes. *Birth Defects Research Part A: Clinical and Molecular Teratology*, 100(4): 250-9. PMID: 24578066.
- Heuzé, Y, N Singh, C Basilico, EW Jabs, G Holmes, JT Richtsmeier 2014 Morphological comparison of the craniofacial phenotypes of mouse models expressing the Apert FGFR2 S252W mutation either in neural crest- or mesoderm-derived tissues. *Bone*, 63:101-9. Epub 2014 Mar 13. PMID: 24632501 [PubMed - in process].
- Motch Perrine, S, T M Cole III, N Martínez-Abadías, K Aldridge, EW Jabs, J T Richtsmeier 2014 Craniofacial divergence by distinct prenatal growth patterns in *Fgfr2* mutant mice. *BMC Devel Biol*, PMID: 24580805.
- Starbuck, JM, T Dutka, T Ratliff, RH Reeves, JT Richtsmeier 2014 Overlapping trisomies for human Chromosome 21 orthologs produce similar effects on skull and brain morphology in Dp(16)1Yey and Ts65Dn mice. *Amer J Med Genet Part A*, first published online: wileyonlinelibrary.com: 04 May 2014. PMID: 24788405.
- Heuzé, Y, G Holmes, I Peter, JT Richtsmeier, EW Jabs 2014 Closing the gap: Genetic and genomic continuum from syndromic to nonsyndromic craniosynostoses. *Current genetic medicine reports*, 2(3), in review.

- Lee, C, JT Richtsmeier, RH Kraft 2014 A multiscale computational model for the growth of the cranial vault in craniosynostosis. Proceedings of the ASME 2014 International Mechanical Engineering Congress & Exposition, IMECE2014.
- Percival, C, A Winkler, H Kim, L Wang, JT Richtsmeier 2014 Imaging vasculature and local tissue layers during early frontal bone osteogenesis with combined Optical Coherence Tomography and Photoacoustic Microscopy. *J Anatomy*, in revision.