

CURRICULUM VITAE

Name: Malcolm Maden

Date of Birth: 23.8.50

Nationality: British (US permanent resident)

Degrees: BSc Biological Sciences
University of Birmingham 1969-1972
PhD Genetics
University of Birmingham 1972-1975

Current appointment: Professor, Department of Biology
Affiliate appointment: Professor, Department of Molecular Genetics & Microbiology

Employer: University of Florida

Location: Department of Biology, Rm 326 Bartram Hall, PO Box 118525
UF Genetics Institute, Rm 410, Cancer Genetics Research Center

Previous positions: 1996 - 2008 Professor of Developmental Biology,
King's College London
1992 – 1996 Reader in Experimental Embryology,
King's College London
1989 - 1992 Lecturer in Anatomy, King's College London
1978 - 1989 Scientist, National Institute for Medical
Research, Mill Hill, London
1975 - 1978 Postdoctoral Fellow, University of Sussex

Key career achievements:

Over 200 scientific publications
Obtaining continued significant research funding.
Inducing regeneration of adult rodent CNS.
Inducing regeneration of adult rodent lung alveoli.
Commercialising my research and obtaining 3 patents.
Major contribution to medical and science teaching.
Significant contribution to University administration and departmental organization.

Research interests: The role of retinoids in development and regeneration, organ regeneration in Urodeles and mammals, regenerative medicine.

Current and past teaching

Stem Cell Biology ZOO4929
Evolutionary Developmental Biology on-line.
Evolutionary Developmental Biology ZOO3703C
Functional Vertebrate Anatomy ZOO3713C
Biology Colloquium BSC1920
Embryology to MBBSI, BDSI and MBBSII students
Histology and Cell Biology to MBBSI and BDSI students

3rd year course (1c.u.) for Anatomy & Human Biology, other science students and intercalated medics entitled “Mechanisms of Development”
Schools Outreach Programme - various lectures
Anatomical dissection of the human cadaver, 1.5 year course to medical students.
Full embryology course to medical and dental students (10hrs)

Graduate students trained

Stella Keeble, 1986; Claire Gribbin, 1987; Emily Gale, 1996; Claire Horton, 1996; Tom Stratford, 1997; Christine Parkinson, 2001; Aida Blentic, 2002; Leigh Wilson, 2003; Matthew Hind, 2003; Susan Reijntjes, 2005; Sian Stinchcombe, 2009; Teala Tyson, 2010; Michelle Kelley, 2013; Jessica Stone, 2015, Trey Polvadore (current).

PhD examinations

More than 30 PhD theses examined throughout the UK as well as several in Holland and Germany

Past graduate committees

Ashley Seifert, Lori Bogler, Lori Albergotti, Courtney Bouldin, Anna Herrera, David Lopez, Nicole Botteri, Merissa Greidler, Oscar Tarrazona, Kate O’Shaunessey, Jeff Fortin, James McGuinness, Jeff Leibovitz, Francesca Leal, Gabrielle Winters, Katherine Roberts, Crystal Jones-Sotomayor,

Current graduate committees

Miguel Salinas-Saavedra, Kelsey Lewis, Trey Polvadore (chair), Daniel Stewart, Kiara Chan, Ruben Garcia, Srithi Purushothaman (at UK), Alessandra Norris, .

University administration

Divisional Research Committee member 1992-1995
Ethics review panel member 2005-2008
Animal committee 2008 – present
Graduate student committee 2011- 14, Chair 2014
Chair of faculty search committee, spring 2012
UFGI seminar committee
Member of Scientific Misconduct committee 2014

University examining

External examiner to University College London Anatomy & Developmental Biology Honours 1992-1995
External examiner to Edinburgh University Developmental Biology Honours course 2001-2004
External examiner to University College London Anatomy & Developmental Biology Honours 2003-2006

Awards

Excellence award in the category of “Imaginative or Innovative Approach” for ZOO3603C Evolutionary Developmental Biology on-line course,
Thomas H Maren Regenerative Biology Fellowship, 2012, for research into regeneration at the Mount Desert Island Biological Laboratory, Maine.
Singer Fund award, \$12,000 to establish the Nexus regeneration project.

Public Service

Member of the Genes and Developmental Biology board of the Biotechnology and Biological Sciences Research Council (one of the 3 funding agencies in the UK) 2004-2007.

Refereeing grant proposals for Wellcome Trust, MRC, Royal Society, CNSF (Canada), NSF and several charities.

Refereeing publications for Nature, Science, and many other top journals

Member of the Faculty of 1000

Member of British Society of Developmental Biology, past committee member

Member of the Society of Developmental Biology

Associate Editor, International Journal of Developmental Biology

Associate Editor, Regeneration

Member of Scientific Advisory Board of Ambystoma Genetic Stock Centre, University of Kentucky.

Faculty contribution to Woods Hole course 'Frontiers in Stem Cells and Regeneration'.

Organized 7 scientific conferences

Commercial interests

3 patents awarded. Two on the use of RAR β and small molecules for neurite regeneration; one on the use of RAR α as a treatment for neurodegenerative diseases.

Consultant for Oxford BioMedica (UK) plc (1999-2006).

Member of Scientific Advisory Board, Albiorex Inc, Palm Harbor, Florida.

Member of the Scientific Advisory Board of Natural Biosciences, SA.

Grant funding

Recent past

NIH GO grant October 2009 – August 2012, co-PIs with Drs E. Scott & R. Voss, \$2.4 million.

Regeneration Project Fellowship June 2009 – May 2012, \$100,000 per year.

W.M.Keck Foundation award to M.Maden & B. Barbazuk (Co-PIs) 03/01/2014 –

02/30/2018 The transformative potential of the regenerating spiny mouse. \$1million.

Current

NIH grant R210D023210 M.Maden & B. Barbazuk (Co-PIs) 03/01/2017 – 02/28/2018

Identifying the genetic changes which induce tissue and organ regeneration in a novel mammalian model system. \$240,188.

NSF project grant, Co-PI J. Monaghan, Northeastern U, 01/01/16 – 12/31/18 Functional analysis of signaling pathways in limb regeneration \$640,000.

NSF project grant, C. Simmons (PI) & M. Maden (Co-PI) 09/01/16 – 08/31/19 Strain-mediated activation of dermal regeneration and fibrosis \$440,000.

NIH grant 1R01DK105916-01 E. Scott (PI) & M. Maden (Co-PI) 07/10/15 – 05/31/19 Axolotl hematopoiesis, a regeneration model.

Collaborations

Dr S.R. Voss, University of Kentucky, project on axolotl transcriptome analysis.

Dr J. Monaghan, Northeastern University, project on limb regeneration in axolotls.

Dr E. Scott, University of Florida, project on hematopoiesis in axolotls and spiny mice.

Dr C. Pepine, University of Florida, project on heart regeneration in spiny mice.

Dr C. Simmons University of Florida, project on biomechanical aspects of spiny mouse fibroblasts.

Dr D. Fuller, University of Florida, project on spinal cord regeneration in spiny mice.

Dr A. Katz, University of Florida, project on adipose derived stem cells and regeneration in spiny mice.

Dr K. Allen, University of Florida, project on osteoarthritis in spiny mice.
Dr R Wingate, King's College London, UK, project on cerebellar development in chicks and reptiles.
Dr D. Chambers, King's College London, UK, project on transcriptome analysis of neural progenitor cells after retinoic acid receptor agonist treatment.
Professor K Patel, University of Reading, UK project on muscle regeneration in the spiny mouse.

Papers published

- WALLACE, H., SPARKES, C.A. & MADEN, M. (1972). Nuclear DNA content of three *Crepis* species. *Heredity* **29**, 367-373.
- WALLACE, H., MADEN, M. & WALLACE, H. (1974). Participation of cartilage grafts in amphibian limb regeneration. *J. Embryol. exp. Morph.* **32**, 391-404.
- MADEN, M. & WALLACE, H. (1975). The origin of limb regenerates from cartilage grafts. *Acta Embryol. exp.* **N2**, 77-86.
- WALLACE, H. & MADEN, M. (1976). The cell cycle during amphibian limb regeneration. *J. Cell Sci.* **20**, 539-547.
- WALLACE, H. & MADEN, M. (1976). Irradiation inhibits the regeneration of aneurogenic limbs. *J. exp. Zool.* **195**, 353-358.
- MADEN, M. & WALLACE, H. (1976). How X-rays inhibit amphibian limb regeneration. *J. exp. Zool.* **197**, 105-114.
- MADEN, M. (1976). Blastemal kinetics and pattern formation during amphibian limb regeneration. *J. Embryol. exp. Morph.* **36**, 561-574.
- MADEN, M. (1977). The role of Schwann cells in paradoxical regeneration in the axolotl. *J. Embryol. exp. Morph.* **41**, 1-13.
- MADEN, M. (1977). The regeneration of positional information in the amphibian limb. *J. theor. Biol.* **69**, 735-753.
- MADEN, M. & TURNER, R.N. (1978). Supernumerary limbs in the axolotl. *Nature* **237**, 232-235.
- MADEN, M. (1978). Neurotrophic control of the cell cycle during amphibian limb regeneration. *J. Embryol. exp. Morph.* **48**, 165-175.
- MADEN, M. (1979). Neurotrophic and X-ray blocks in the blastemal cell cycle. *J. Embryol. exp. Morph.* **50**, 169-173.
- MADEN, M. (1979). The role of irradiated tissue during pattern formation in the regenerating limb. *J. Embryol. exp. Morph.* **50**, 235-242.
- MADEN, M. (1979). Regulation and limb regeneration : the effect of partial irradiation. *J. Embryol. exp. Morph.* **52**, 183-192.
- MADEN, M. (1980). Intercalary regeneration in the amphibian limb and the rule of distal transformation. *J. Embryol. exp. Morph.* **56**, 201-209.
- MADEN, M. & GOODWIN, B.C. (1980). Experiments on the developing limb buds of the axolotl, *Ambystoma mexicanum*. *J. Embryol. exp. Morph.* **57**, 177-187.
- MADEN, M. (1980). The structure of supernumerary limbs. *Nature* **287**, 803-805.
- MADEN, M. (1981). Experiments on Anuran limb buds and their significance for the principles of vertebrate limb development. *J. Embryol. exp. Morph.* **63**, 243-265.
- MADEN, M. (1981). Morphallaxis in an epimorphic system : size, growth control and pattern formation during amphibian limb regeneration. *J. Embryol. exp. Morph.* **65** (suppl.), 157-167.
- MADEN, M. (1982). Vitamin A and pattern formation in the regenerating limb. *Nature* **295**, 672-675.
- MADEN, M. (1982). Supernumerary limbs in amphibians. *Am. Zool.* **22**, 131-142.
- MADEN, M. (1982). Axial organisation of the regenerating limb : asymmetrical behaviour following skin transplantation. *J. Embryol. exp. Morph.* **70**, 197-213.

- MADEN, M. (1982). The structure of 180° supernumerary limbs and a hypothesis of their function. *Dev. Biol.* **93**, 257-266.
- MADEN, M., GRIBBIN, M.C. & SUMMERBELL, D. (1983). Axial organisation in developing and regenerating limbs. In Goodwin, N. Holder & C.C. Wylie eds.) pp 381-397. Camb. Univ Press.
- MADEN, M. (1983). Vitamin A and the control of pattern in regenerating limbs. In *Limb Development and Regeneration* Part A. pp 445-454. Alan R. Liss Inc., New York.
- MADEN, M. (1983). The effect of vitamin A on limb regeneration in *Rana temporaria*. *Dev. Biol.* **98**, 409-416.
- MADEN, M. (1983). A test of the predictions of the boundary model regarding supernumerary limb structure. *J. Embryol. exp. Morph.* **76**, 147-155.
- MADEN, M. (1983). The effect of vitamin A on the regenerating axolotl limb. *J. Embryol. exp. Morph.* **77**, 273-295.
- MADEN, M. (1984). Does vitamin A act on pattern formation via the epidermis or the mesenchyme? *J. exp. Zool.* **230**, 387-392.
- MADEN, M. (1984). Retinoids as probes for investigating the molecular basis of positional information. In *Pattern Formation* (G.M. Malacinski & S.V. Bryant eds) pp 539-555. Macmillan, New York.
- WALLACE, H. & MADEN, M. (1984). The local action of vitamin A on amphibian limb regeneration. *Experientia* **40**, 985-986.
- SUMMERBELL, D., DHOUILLY, D. & MADEN, M. (1984). Vitamin A and the control of development. In *Matrices and Cell Differentiation* pp 439-451. Alan R. Liss Inc., New York.
- MADEN, M. & HOLDER, N. (1984). Axial characteristics of nerve induced supernumerary limbs in the axolotl. *Roux,s Arch. Dev. Biol.* **194**, 228-235.
- MADEN, M. & MUSTAFA, K. (1984). The cellular contributions of blastema and stump to 180° supernumerary limbs in the axolotl. *J. Embryol. exp. Morph.* **84**, 233-253.
- MADEN, M. (1985). Retinoids and the control of pattern in limb development and regeneration. *Trends in Genetics* **1**, 103-107.
- MADEN, M. (1985). Retinoids and the control of pattern in regenerating limbs. In *Retinoids, Differentiation and Disease* (CIBA Foundation Symposium **113**) pp 132-148. Pitman Press.
- SUMMERBELL & MADEN, M. (1985). Regulation of size and pattern and the effect of vitamin A in regeneration and development. In *Prevention of Physical and Congenital Defects*. Part C: Basic and Medical Science, Education and Future Strategies. pp 121-125. Alan R Liss Inc., New York.
- MADEN, M., KEEBLE, S. & COX, R.A. (1985). The characteristics of local application of retinoic acid to the regenerating axolotl limb. *Roux,s Arch. Dev. Biol.* **194**, 228-235.
- STEPHENS, N., HOLDER, N. & MADEN, M. (1985). Motorneurone pools innervating muscles in vitamin A-induced proximal-distal reduplicate limbs in the axolotl. *Proc. Roy. Soc. Lond. B* **224**, 341-354.
- SCADDING, S.R. & MADEN, M. (1986). Comparison of the effects of vitamin A on limb development and regeneration in the axolotl, *Ambystoma mexicanum*. *J. Embryol. exp. Morph.* **91**, 19-34.
- SCADDING, S.R. & MADEN, M. (1986). Comparison of the effects of vitamin A on limb development and regeneration in tadpoles of *Xenopus laevis*. *J. Embryol. exp. Morph.* **91**, 35-53.
- SCADDING, S.R. & MADEN, M. (1986). The effects of local application of retinoic acid on limb development and regeneration in tadpoles of *Xenopus laevis*. *J. Embryol. exp. Morph.* **91**, 55-63.
- KEEBLE, S. & MADEN, M. (1986). The presence of cytoplasmic retinoic acid-binding proteins in amphibian tissues and their possible role in limb regeneration. In *Progress in Developmental Biology* Part A (H.C. Slavkin ed.) pp 309-314. Alan R. Liss Inc., New York.

- KEEBLE, S. & MADEN, M. (1986). Retinoic acid-binding protein in the axolotl: distribution in mature tissues and time of appearance during limb regeneration. *Dev. Biol.* **117**, 435-441.
- MADEN, M. & SUMMERBELL, D. (1986). Retinoic acid-binding protein in the chick limb bud: identification at developmental stages and binding affinities of various retinoids. *J. Embryol. exp. Morph.* **97**, 239-250.
- ANAND, P., MCGREGOR, G.P., GIBSON, S.J., POLAK, J.M. & BLOOM, S.R. (1987). Increase of substance P-like immunoreactivity in the peripheral nerve of the axolotl after injury. *Neurosci. Lett.* **82**, 241-245.
- MADEN, M. & KEEBLE, S. (1987). The role of cartilage and fibronectin during retinoic acid-induced specification of pattern in the regenerating limb. *Differentiation* **36**, 175-184.
- MADEN, M. (1988). Pattern formation in the regenerating amphibian limb. *Proc. 6th Int. Singer Symp.* (S. Inoue et al., eds) pp 111-124. Okada Pub Co. Maebashi, Japan.
- MADEN, M., ONG, D.E., SUMMERBELL, D. & CHYTIL, F. (1988). Spatial distribution of cellular protein binding to retinoic acid in the chick limb bud. *Nature* **335**, 733-735.
- KEEBLE, S. & MADEN, M. (1989). The relationship among retinoid structure, affinity for retinoic acid-binding protein, and ability to respecify pattern in the regenerating limb. *Dev. Biol.* **132**, 26-34.
- MADEN, M. & SUMMERBELL, D. (1989). Biochemical pathways involved in the respecification of pattern by retinoic acid. *NATO Advanced Research Workshop. Recent Trends in Regeneration Research* (V. Kiriotsis, S.Koussoulakos & H. Wallace eds.) pp 313-124. Plenum Press, New York.
- MADEN, M., ONG, D.E., SUMMERBELL, D. & CHYTIL, F. (1989). The role of retinoid-binding proteins in the generation of pattern in the developing limb, the regenerating limb and the nervous system. *Development* (suppl) 109-119.
- MADEN, M., ONG, D.E., SUMMERBELL, D., CHYTIL, F. & HIRST, E.A. (1989). Cellular retinoic acid-binding protein and the role of retinoic acid in the development of the chick embryo. *Dev. Biol.* **135**, 124-132.
- SUMMERBELL, D. & MADEN, M. (1990). Retinoic acid, a developmental signalling molecule. *Trends in Neurosci.* **13**, 142-147.
- MADEN, M., ONG, D.E. & CHYTIL, F. (1990). Retinoid-binding protein distribution in the developing mammalian nervous system. *Development* **109**, 75-80.
- STOCUM, D.L. & MADEN, M. (1990). Regenerating Limbs. In *Methods in Enzymology*. **190**, 189-201. (L. Packer ed.) Academic Press, Orlando, Florida.
- MADEN, M., HUNT, P., ERIKSSON, U., KURIOWA, A., KRUMLAUF, R. & SUMMERBELL, D. (1991). Retinoic acid-binding protein, rhombomeres and the neural crest. *Development* **111**, 35-44.
- HUNTER, K., MADEN, M., SUMMERBELL, D., ERIKSSON, U. & HOLDER, N. (1991). Retinoic acid stimulates neurite outgrowth in the amphibian spinal cord. *P.N.A.S. USA* **80**, 5525-5529.
- GRAHAM, A., MADEN, M. & KRUMLAUF, R. (1991). The murine Hox 2 genes display spatially and temporally dynamic patterns of expression during central nervous system development. *Development* **112**, 255-264.
- MADEN, M., WATERSON, N., SUMMERBELL, D., MAIGNAN, J., DARMON, M. & SHROOT, B. (1991). The role of retinoic acid and cellular retinoic acid-binding protein in the regenerating amphibian limb. In *Developmental Patterning of the Vertebrate Limb*. (J.R. Hinchliffe et al., eds.) pp 89-96. Plenum Press, New York.
- MADEN, M. & TICKLE, C. (1991). Retinoic acid and vertebrate development. *Seminars in Developmental Biology* **2**, Issue **3**. W.B. Saunders Co., Philadelphia, USA.
- MADEN, M. (1991). Retinoid-binding proteins in the embryo. In *Seminars in Developmental Biology* **2**, 161-170 (M.Maden & C. Tickle eds.) W.B. Saunders Co., Philadelphia, USA.
- MADEN, M., SUMMERBELL, D., MAIGNAN, J., DARMON, M. & SHROOT, B. (1991). The respecification of limb pattern by new synthetic retinoids and their interaction with cellular retinoic acid-binding protein. *Differentiation* **47**, 49-55.

- MADEN, M. & HOLDER, N. (1991). The involvement of retinoic acid in the development of the vertebrate nervous system. *Development (suppl)* **2**, 87-94.
- SUMMERBELL, D., SMITH, J.C. & MADEN, M. (1991). The molecular basis of positional information. *In vivo* **5**, 457-472.
- MADEN, M., GALE, E., HORTON, C. & SMITH, J.C. (1992). Retinoid-binding proteins in the developing vertebrate nervous system. In *Retinoids in Normal Development and Teratogenesis*. (G.M. Morriss-Kay ed.) pp 119-134. Oxford Univ. Press.
- MADEN, M., HORTON, C. GRAHAM, A., LEONARD, L., PIZZEY J., ERIKSSON, U. & SIEGENTHALER, G. (1992). Domains of cellular retinoic acid-binding protein I (CRABP I) expression in the hindbrain and neural crest of the mouse embryo. *Mech. Dev.* **37**, 13-23.
- KRAUSSE, S., MADEN, M. HOLDER, N. & WILSON, S.W. (1992). Zebrafish pax[b] is involved in the formation of the midbrain-hindbrain boundary. *Nature* **360**, 87-89.
- MADEN, M. & HOLDER, N. (1992). Retinoic acid and development of the central nervous system. *BioEssays* **14**, 431-438.
- HOLDER, N. & MADEN, M. (1992). Mice with half a mind. *Nature* **360**, 708.
- BERKOVITZ, B.K.B. & MADEN, M. (1993). The occurrence of cellular retinoic acid-binding protein in the periodontal ligament of the adult rat. *J. Periodont.* **64**, 392-396.
- MADEN, M. (1993). The homeotic transformation of tails into limbs in *Rana temporaria* by retinoids. *Dev. Biol.* **159**, 379-391.
- BERKOVITZ, B.K.B., MADEN, M. & ERIKSSON, U. (1993). The distribution of cellular retinoic acid-binding protein during odontogenesis. *Arch. oral Biol.* **38**, 837-843.
- MADEN, M. (1993). The effects of vitamin A (retinoids) on pattern formation implies a uniformity of developmental mechanisms throughout the animal kingdom. *Acta Biotheor.* **41**, 425-445.
- MADEN, M. (1994). The role of retinoids in embryonic development. In *Vitamin A in Health and Disease*. (R. Blomhoff ed.) pp 289-322. Marcel Dekker Inc., New York.
- MADEN, M. (1994). The retinoic acid supergun affair. *Current Biol.* **4**, 281-284.
- MADEN, M. (1994). Vitamin A in embryonic development. *Nutrit. Rev.* **52**, S3-S12.
- SCADDING, S.R. & MADEN, M. (1994). Retinoic acid gradients in limb regeneration. *Dev. Biol.* **162**, 608-617.
- MCKAY, I.J., MUCHAMORE, I., KRUMLAUF, R., MADEN, M., LUMSDEN, A. & LEWIS, J. (1994). The deaf Kreisler mouse: a hindbrain segmentation mutant. *Development* **120**, 2199-2211.
- MADEN, M. (1994). The limb bud - part two. *Nature* **371**, 560-561.
- BERKOVITZ, B.K.B. & MADEN, M. (1994). The distribution of cellular retinoic acid-binding protein (CRABP I) and cellular retinol-binding protein (CRBP I) in the rat dentition in normal and vitamin A deficient rats. In *The Biological Mechanisms of Tooth Eruption, Resorption and Replacement by Implants*. (Z. Davidovitch ed.) pp 283-297. ESCO Media, Birmingham, Al., USA
- MADEN, M. & HOLDER, N. (1994). The development of the central nervous system: the involvement of retinoic acid. *Retinoids Today and Tomorrow* **37**, 11-14.
- MADEN, M. (1994). The distribution of cellular retinoic acid-binding protein I and II in the chick embryo and its relationship to teratogenesis. *Teratology* **50**, 294-301.
- BERKOVITZ, B.K.B. & MADEN, M. (1995). The distribution of cellular retinoic acid-binding protein (CRABP I) and cellular retinol-binding protein (CRBP I) during molar tooth development and eruption in the rat. *Conn. Tiss. Res.* **31**, 1-9.
- HORTON, C. & MADEN, M. (1995). The endogenous distribution of retinoids during normal development and teratogenesis in the mouse embryo. *Developmental Dynamics* **202**, 312-323.
- LEONARD, L., HORTON, C., MADEN, M. & PIZZEY, J. (1995). Anteriorisation of CRABP I expression by retinoic acid in the developing mouse central nervous system and its role in teratogenesis. *Dev. Biol.* **168**, 514-528.
- VIVIANO, C., HORTON, C., MADEN, M. & BROCKES, J.P. (1995). Synthesis and release of 9-*cis* retinoic acid by the urodele wound epidermis. *Development* **121**, 3753-3762.

- MADEN, M. (1995). Retinoic acid in embryonic and post-embryonic development. *Ontogeny*. **26**, 419-429.
- COSTARIDES, P., HORTON, C., ZEITLINGER, J., HOLDER, N. & MADEN, M. (1996). Endogenous retinoids in the zebrafish embryo and adult. *Developmental Dynamics* **205**, 41-51.
- GALE, E., PRINCE, V., LUMSDEN, A., CLARKE, J., HOLDER, N. & MADEN, M. (1996). Late effects of retinoic acid on neural crest and aspects of rhombomere identity. *Development* **122**, 783-793.
- MADEN, M., GALE, E., KOSTETSKII, I. & ZILE, M.H. (1996). Vitamin A-deficient quail embryos have half a hindbrain and other neural defects. *Current Biology* **6**, 417-426.
- MADEN, M. (1996). Retinoids in patterning: Chimeras win by a knockout. *Curr. Biol.* **6**, 790-793.
- MADEN, M. (1996). Retinoic acid in development and regeneration. *J. Biosci.* **21**, 299-312.
- MADEN, M. & CORCORAN, J. (1996). The role of thyroid hormone and retinoid receptors in the homeotic transformation of tails into limbs in frogs. *Dev. Genet.* **19**, 85-93.
- STRATFORD, T., HORTON, C. & MADEN, M. (1996). Retinoic acid is required for the initiation of outgrowth in the chick limb bud. *Curr. Biol.* **6**, 1124-1133.
- MADEN, M., GRAHAM, A., GALE, E., ROLLINSON, C. & ZILE, M.H. (1997). Positional apoptosis during vertebrate CNS development in the absence of endogenous retinoids. *Development* **124**, 2799-2805.
- MADEN, M. (1997). Retinoic acid and its receptors in limb regeneration. *Seminars in Cell & Dev. Biol.* **8**, 445-453.
- STRATFORD, T., KOSTKOPOULOU, K. & MADEN, M. (1997). *Hoxb-8* has a role in establishing early anterior-posterior polarity in chick forelimb but not in hindlimb. *Development* **124**, 4225-4234.
- MADEN, M. & PIZZEY, J. (1997). The role of retinoids in patterning fish, amphibian and chick embryos. In *Retinoids: Their Physiological Function and Therapeutic Potential*. Advances in Organ Biology **3**, 93-139.
- MADEN, M., GALE, E. & ZILE, M.H. (1998). The role of vitamin A in the development of the central nervous system. *J. Nutr.* **128**, 471S-475S.
- PARROW, V., HORTON, C., MADEN, M., LAURIE, S. & NOTARIANNI, E. (1998). Retinoids are endogenous to the porcine blastocyst and secreted by trophectoderm cells at functionally active levels. *Int. J. Dev. Biol.* **42**, 629-632.
- UPTON, B., STRATFORD, T. & MADEN, M. (1998). The interaction between retinoic acid and sonic hedgehog expression during feather development in the chick embryo. *Development Sci.* **1**, 1-18.
- MADEN, M. (1998). The role of retinoids in developmental mechanisms in embryos. In *Subcellular Biochemistry, Volume 30: Fat-Soluble Vitamins*. (P.J. Quinn & V.E. Kagan eds). pp 81-111. Plenum Press, New York.
- MADEN, M., KEEN, G. & JONES, G.E. (1998). Retinoic acid as a chemotactic molecule in neuronal development. *Int. J. Dev. Neurosci.* **16**, 317-322.
- MADEN, M. (1998). A nervous vitamin. *Current Biol.* **8**, R846-R849.
- MADEN, M., SONNEVELD, E., VAN DER SAAG, P.T. & GALE, E. (1998). The distribution of retinoic acid in the chick embryo: implications for developmental mechanisms. *Development* **125**, 4133-4144.
- MADEN, M. (1998). Retinoids as endogenous components of the regenerating limb and tail. *Wound Rep. Reg.* **6**, 358-365.
- MADEN, M. (1999). Retinoids in Nonmammalian Embryos. In *Methods in Molecular Biology, Vol 97: Molecular Embryology: Methods and Protocols*. (P.T. Sharpe & I. Mason eds) pp491-509. Humana Press Inc., Totowa, NJ.
- MADEN, M. (1999). Axolotl/newt. In *Methods in Molecular Biology, Vol 97: Molecular Embryology: Methods and Protocols*. (P.T. Sharpe & I. Mason eds) pp415-428. Humana Press Inc., Totowa, NJ.

- STRATFORD, T., LOGAN, C., ZILE, M.H. & MADEN, M. (1999). Abnormal anteroposterior and dorsoventral patterning of the limb bud in the absence of retinoids. *Mech. of Dev.* **81**, 115-125.
- CORCORAN, J.C. & MADEN, M. (1999). Nerve growth factor acts via retinoic acid synthesis to stimulate neurite outgrowth. *Nature Neurosci.* **2**, 307-308.
- MADEN, M. (1999). Retinoids in neural development. In *Handbook of Experimental Pharmacology, Volume 139: Retinoids*. (H. Nau & W.S. Blaner eds). pp 399-442. Springer-Verlag, Heidelberg.
- CROYDON, A.C., MILLAR, B.J., LINDEN, R.W.A. & MADEN, M. (1999). Mesenchepalic innervation of the vibrissal follicle-sinus complex in the mouse embryo. *Int.J. Dev. Neurosci.* **17**, 401-409.
- SONNEVELD, E., VAN DEN BRINK, C.E., VAN DER LEEDE, B.J., MADEN, M. & VAN DER SAAG, P.T. (1999). Embryonal carcinoma cell lines stably transfected with mRAR β 2-lacZ: sensitive system for measuring levels of active retinoids. *Exp. Cell Res.* **250**, 284-297.
- MADEN, M. (1999). Heads or Tails? Retinoic acid will decide. *BioEssays* **21**, 809-812.
- GALE, E., ZILE, M.H. & MADEN, M. (1999). Hindbrain respecification in the retinoid-deficient quail. *Mech. of Dev.* **89**, 43-54.
- MADEN, M. (1999). In IARC Handbooks of Cancer Prevention, volume 4 "Retinoids".
- MADEN, M., GRAHAM, A., ZILE, M. & GALE, E. (2000). Abnormalities of somite development in the absence of retinoic acid. *Int. J. Dev. Biol.* **44**, 151-159.
- MADEN, M. (2000). The role of retinoic acid in embryonic and post-embryonic development. *Proc. Nutr. Soc.* **59**, 65-73.
- CORCORAN, J.C., SHROOT, B., PIZZEY, J. & MADEN, M. (2000). The role of retinoic acid receptors in neurite outgrowth from different populations of embryonic mouse dorsal root ganglia. *J. Cell Sci.* **113**, 2567-2574.
- SCHMIDT, C., CHRIST, B., MADEN, M., BRAND-SABERI, B. & PATEL, K. (2001). Regulation of EphA4 expression in paraxial and lateral plate mesoderm by ectoderm derived signals. *Dev. Dynam.* **220**, 377-386.
- MADEN, M. (2001). Vitamin A and the developing embryo. *Postgrad. Med. J.* **77**, 489-491.
- SCHNEIDER, R.A., HU, D., RUBENSTEIN, J.L.R., MADEN, M. & HELMS, J.A. (2001). Local retinoid signaling coordinates forebrain and facial morphogenesis by maintaining FGF8 and SHH. *Development* **128**, 2755-2767.
- MADEN, M.. The role and distribution of retinoic acid during CNS development. (2001). *Int. Rev. Cytol.* **209**, 1-77.
- BERKOVITZ, B.K.B., MADEN, M., MCCAFFERY, P.W. & BARRETT, A.W. (2001). The distribution of retinaldehyde dehydrogenase-2 in rat and human orodental tissues. *Arch. Oral. Biol.* **46**, 1099-1104.
- HIND, M., CORCORAN, J. & MADEN, M. (2002). Alveolar proliferation, retinoid synthesizing enzymes and endogenous retinoids in the postnatal mouse lung: different roles for Aldh-1 and Raldh-2. *Am. J. Resp. Cell Mol. Biol.* **26**, 67-73.
- HIND, M., CORCORAN, J. & MADEN, M. (2002). Temporal/spatial distribution of retinoid binding proteins and RAR isoforms in the postnatal lung. *Am. J. Physiol. Cell. Mol. Physiol.* **282**, L468-L476.
- QUINLAN, R., GALE, E., MADEN, M. & GRAHAM, A. (2002). Deficits in the posterior pharyngeal endoderm in the absence of retinoids. *Dev. Dynam.* **225**, 54-60.
- CORCORAN, J.C., SO, P.L., BARBER, R.D., VINCENT, K.J., MAZARAKIS, N.D., MITHROPHANOS, K.A., KINGSMAN, S.M. & MADEN, M. (2002). Retinoic acid receptor-b2 and neurite outgrowth in the adult mouse spinal cord in vitro. *J. Cell Sci.* **115**, 3779-3786.
- MADEN, M. (2002). Retinoic acid and limb regeneration. A personal view. *Int. J. Dev. Biol.* **46**, 883-886.
- MADEN, M. (2002). Positional information: knowing where you are in a limb. *Current Biol.* **12**, R773-R775.

- MADEN, M. (2002). Retinoid signalling in the development of the central nervous system. *Nature Neurosci.* **3**, 843-853.
- CORCORAN, J.C., SO, P.L. & MADEN, M. (2002). Absence of retinoids can induce motoneuron disease in the adult rat and a retinoid defect is present in motoneuron disease patients. *J. Cell Sci.* **115**, 4735-4741.
- ALLEN, S.P., MADEN, M. & PRICE, J.S. (2002). A role for retinoic acid in regulating the regeneration of deer antlers. *Dev. Biol.* **251**, 409-423.
- MADEN, M. & HIND, M. (2003). Retinoic acid, a regeneration-inducing molecule. *Dev. Dynam.* **226**, 237-244.
- BLENTIC, A., GALE, E. & MADEN, M. (2003). Retinoic acid signalling in the avian embryo identified by sites of expression of synthesising and catabolising enzymes. *Dev. Dynam.* **227**, 114-127.
- MCCAFFERY, P.J., ADAMS, J., MADEN, M. & ROSA-MOLINAR, E. (2003). Too much of a good thing: retinoic acid as an endogenous regulator of neural differentiation and exogenous teratogen. *Eur. J. Neurosci.* **18**, 457-472.
- REIJNTJES, S., GALE, E. & MADEN, M. (2003). Expression of the retinoic acid catabolising enzyme CYP26B1 in the chick embryo and its regulation by retinoic acid. *Gene Expr. Patterns* **3**, 621-627.
- DIEZ DEL CORRAL, R., OLIVERA-MARTINEZ, I., GORIELY, A., GALE, E., MADEN, M. & STOREY, K. (2003). Opposing FGF and retinoid pathways control ventral neural patterning, neuronal differentiation and segmentation during axis extension. *Neuron* **40**, 1-20.
- MADEN, M. (2003). Regeneration: every clot has a thrombin lining. *Current Biol.* **13** R517-R518.
- WILSON, L., GALE, E. & MADEN, M. (2003). The role of retinoic acid in the morphogenesis of the neural tube. *J. Anat.* **203**, 357-368.
- HIND, M. & MADEN, M. (2004). Retinoic acid induces alveolar regeneration in the adult mouse lung. *Eur. Resp. J.* **23**, 20-27.
- WILSON, L., GALE, E., CHAMBERS, D. & MADEN, M. (2004). The role of retinoic acid in the dorsoventral patterning of the spinal cord. *Dev. Biol.* **269**, 433-446.
- MADEN, M. (2004). Retinoids and CNS Development. In: McGraw-Hill Yearbook of Science and Technology pp286-289. McGraw-Hill, New York.
- REIJNTJES, S., GALE, E. & MADEN, M. (2004). Generating gradients of retinoic acid in the chick embryo: Cyp26C1 expression and a comparative analysis of the Cyp26 enzymes. *Dev. Dynam.* **230**, 509-517.
- MADEN, M. & HIND, M. (2004). Retinoic acid in alveolar development, maintenance and regeneration. *Phil. Trans. R. Soc. Lond. B* **359**, 799-808.
- MADEN, M. (2004). Retinoic acid receptor (RAR) γ agonists as a treatment for emphysema. *Retinoids & lipid-soluble vitamins in clinical practice.* **20**, 43-46.
- MADEN, M. (2004). *Retinoids*. In 'The Molecular Biology of Gastrulation'. pp549-552. C. Stern ed. Cold Spring Harbor Lab. Press, Cold Spring Harbor, New York..
- MADEN, M. (2004). *Retinoic Acid During Limb Regeneration*. In 'Key Experiments for Practical Developmental Biology'. M. Mari-Beffa & J. Knight eds. Camb. Univ Press.
- MADEN, M. (2004). Retinoids in Lung Development and Regeneration. *Current Topics in Dev. Biol.* **61**, 154-189.
- CORCORAN, J.P.T. & MADEN, M. (2004). Disruption of the retinoid signalling pathway causes a deposition of amyloid β in the adult rat brain. *Eur. J. Neurosci.* **20**, 896-902.
- REIJNTJES, S., BLENTIC, A., GALE, E. & MADEN, M. (2005). The control of morphogen signalling: Regulation of the synthesis and catabolism of retinoic acid in the developing embryo. *Dev. Biol.* **285**, 224-237.
- WILSON, L. & MADEN, M. (2005). The mechanisms of dorsoventral patterning in the vertebrate neural tube. *Dev. Biol.* **282**, 1-13.
- WONG, L-F, YIP, P.K., BATTAGLIA, A., GRIST, J., CORCORAN, J., MADEN, M., AZZOUZ, M., KINGSMAN, S.M., KINGSMAN, A.J., MAZARAKIS, N.D. & MCMAHON, S.B. (2006). Retinoic

- acid receptor $\beta 2$ promotes functional regeneration of sensory axons into the adult rat spinal cord. *Nature Neurosci.* **9**, 243-250.
- MADEN, M. (2006). Retinoids and the spinal cord. *J. Neurobiol.* **66**, 726-738.
- MADEN M. (2006). Analysis of retinoid signalling in embryos. In *Growth Factor Signalling in Embryos*. M. Whitman & A.K. Slater (eds) pp87-128. CRC Press, Boca Raton, Florida
- MADEN, M. (2006). Retinoids have differing efficacies at inducing alveolar regeneration in a dexamethasone treated mouse model. *Am. J. Resp. Cell Mol Biol.* **35**, 260-267.
- PO, S.L., YIP, P.K., BUNTING, S, WONG, L-F., MAZARAKIS, N.D., HALL, S.,MCMAHON, S., MADEN, M. & CORCORAN, J.P. (2006). Interactions between retinoic acid, nerve growth factor and sonic hedgehog signalling pathways in neurite outgrowth. *Dev. Biol.* **298**, 167-175.
- YIP,P.K., WONG, L-F., PATTINSON, D., BATTAGLIA, A., GRIST, J., BRADBURY, E.J., MADEN, M., MCMAHON, S.B. & MAZARAKIS, N.D. (2006). Lentiviral vector expressing retinoic acid receptor $\beta 2$ promotes recovery of function after corticospinal injury in the adult rat spinal cord. *Human Mol. Genet.* **15**, 1-12.
- CHAMBERS, D., MADEN, M. & LUMSDEN, A. (2007). RALDH-independent generation of retinoic during vertebrate embryogenesis by CYP1B1. *Development* **134**, 1369-1383.
- MADEN, M., BLENTIC, A., REIJNTJES, S., SEGUIN, S., GALE, E. & GRAHAM, A. (2007). Retinoic acid is required for specification of the ventral eye field and for Rathke's pouch in the avian embryo. *Int. J. Dev. Biol.* **51**, 191-200.
- REIJNTJES, S., RODAWAY, A. & MADEN, M. (2007). The retinoic acid metabolizing gene, CYP26B1, functions in zebrafish to pattern the cranial neural crest. *Int. J. Dev. Biol.* **51**, 351-360.
- MADEN, M. (2007). Commentary. *Respiratory Medicine: COPD Update* **3**, 71.
- MADEN, M. (2007). Retinoic acid in the development, regeneration and maintenance of the nervous system. *Nature Reviews Neurosci.* **8**, 755-765.
- WILSON, L.J., MYATT, A., SHARMA, A., MADEN, M. and WINGATE, R.J.T. (2007). Retinoic acid is a potential dorsalising signal in the late embryonic chick hindbrain. *BMC Dev. Biol.* **7**, 138.
- STINCHCOMBE, S.V. and MADEN, M. (2008). Retinoic acid-induced alveolar regeneration. Critical differences in strain sensitivity. *Am. J. Respir. Cell Mol. Biol.* **38**, 185-191
- MADEN, M. (2008). Retinoids in Nonmammalian Embryos. In *Methods in Molecular Biology*, Vol **461: Molecular Embryology: Methods and Protocols. (P.T. Sharpe & I. Mason eds, 2nd ed.) pp541-559. Humana Press Inc., Totawa, NJ.**
- MADEN, M. (2008). Axolotl/newt. In *Methods in Molecular Biology*, Vol **461: MolecularEmbryology: Methods and Protocols. (P.T. Sharpe & I. Mason eds, 2nd ed.) pp467-480. Humana Press Inc., Totowa, NJ.**
- GONCALVES, M.B., AGUDO, M., CONNOR, S., MCMAHON S., MINGER, S.L., MADEN, M. & CORCORAN, J.P. (2009). Sequential RARbeta and alpha signalling in vivo can induce adult forebrain neural progenitor cells to differentiate into neurons through Shh and FGF signalling pathways. *Dev. Biol.* **326**, 305-313.
- HIND, M., GILTHORPE, A., STINCHCOMBE, S.V. & MADEN, M. (2009). Retinoid induction of alveolar regeneration: from mice to man? *Thorax* **64**, 451-457.
- KRAGL, M., KNAPP, D., NACU, E., KHATTAK, S., MADEN, M., EPPERLEIN, H-H. and TANAKA, E.M. (2009). Cells keep a memory of their tissue origin during axolotl limb regeneration. *Nature* **460**, 60-65.
- AGUDO, M., YIP, P., DAVIES, M., BRADBURY, E., DOHERTY, P., MCMAHON, S., MADEN, M. & CORCORAN, J.P. (2010). A retinoic acid receptor beta agonist (CD2019) overcomes inhibition of axonal outgrowth via phosphoinositide 3-kinase signalling in the injured adult spinal cord. *Neurobiol. Dis.* **37**, 147-155.
- XU Q., HENDRY B. M., MADEN M., LU H., WONG Y. F., RANKIN A. R., NOOR M. & KOPP J. B. (2010). Kidneys of Alb/TGF- $\beta 1$ transgenic mice are deficient in retinoic

- acid and exogenous retinoic acid shows dose-dependent toxicity. *Nephron Exp. Nephrol.* **114**, e127-e132.
- REIJNTJES, S., ZILE, M.H. & MADEN, M. (2010). The expression of *Strab6* and *Rdh10* in the avian embryo and their contribution to the generation of retinoid signatures. *Int. J. Dev. Biol.* **54**, 1267-1275.
- JARVIS, C.I., GONCALVES, M.B., CLARKE, E., DORGUEL, M., KALINDJIAN, S.B., THOMAS, S.A., MADEN, M. & CORCORAN, J.P.T. (2010). Retinoic acid receptor- α signalling antagonizes both intracellular and extracellular amyloid- β production and prevents neuronal cell death caused by amyloid- β . *Eur. J. Neurosci.* **32**, 1246-1255. □
- HIND, M & MADEN, M. (2011). Is a regenerative approach viable for the treatment of COPD? *Br. J. Pharmacol.* **163**, 106-115.
- SEIFERT, A., MONAGHAN, J., SMITH, M., STIER, A., PASCH, B., MICHONNEAU, F., & MADEN, M. (2011). The influence of functional traits on mechanisms controlling appendage regeneration. *Biol. Rev. Camb. Philos. Soc.* **87**, 330-45.
- SEIFERT, A., MONAGHAN J.R., VOSS, R. & MADEN, M. (2012). Skin regeneration in adult axolotls: a blueprint for scar-free healing in vertebrates. *PLOS One* **7**:e32875. Epub 2012 Apr 2.
- MONAGHAN J.R. & MADEN, M. (2012). Real-time visualization of retinoic acid signaling during limb development and regeneration. *Dev. Biol.* **368**, 63-75.
- MONAGHAN, J., ATHIPPOZY, A., SEIFERT, A.W., PUTTA, S., STROMBERG, A., MADEN, M., GARDINER, D.M. & VOSS, S.R. (2012). Gene expression patterns specific to the regenerating limb of the Mexican axolotl. *Biology Open* **10**.1242/bio.20121594.
- SEIFERT, A., KIAMA, S.G., SEIFERT, M., GOHEEN, J., PALMER, T & MADEN, M. (2012). Weak skin and tissue regeneration in African spiny mice (*Acomys*). *Nature* **489**, 561-566.
- MONAGHAN, J. & MADEN, M. (2012). Cellular plasticity during vertebrate appendage regeneration. *Curr Top Microbiol Immunol.* **367**, 53-74.
- MADEN, M., MANWELL, L. & ORMEROD, B.K. (2013). Proliferation zones in the axolotl brain and regeneration of the telencephalon. *Neural Dev.* **8**, 1
- MADEN, M. (2013). Who needs stem cells if you can de-differentiate? *Cell Stem Cell* **13**, 640-641.
- MONAGHAN, J., STEIR, A.C., MICHONNEAU, F., SMITH, M.D., PASCH, B., MADEN, M. & SEIFERT, A.W., (2014). Experimentally induced metamorphosis in axolotls reduced regenerative rate and fidelity. *Regeneration* **1**, 2-14.
- SEIFERT, A.W. & MADEN, M. (2014). New insights into vertebrate skin regeneration. *Int. Rev. Cell Mol. Biol.* **310**, 129-169.
- LOPEZ, D., LIN, L., MONAGHAN, J., COGLE, C.R., BOVA, F.J., MADEN, M. & SCOTT, E.W. (2014). Mapping hematopoiesis in a fully regenerative vertebrate: the axolotl. *Blood* **124**, 1232-1241.
- MADEN, M (2015). Retinoic acid signaling and central nervous system development. In “*THE RETINOIDS, Biology, Biochemistry and Disease*”, eds P. Dolle & K. Niederreither. Wiley-Blackwell, New Jersey. Pp 309-338.
- MADEN, M., AVILA, D., ROY, M. & SEIFERT, A.W. (2015). Tissue specific reactions to positional discontinuities in the regenerating axolotl limb. *Regeneration* **2**, 137-147.
- BRANT J.O., LOPEZ, M-C, BAKER, H.V., BARBAZUK, W.B. & MADEN, M. (2015). A comparative analysis of gene expression profiles during skin regeneration in *Mus* and *Acomys*. *PlosOne* Nov **25**;10(11):e0142931.
- BRANT, J.O., YOON, J.H., POLVADORE T., BARBAZUK, B. & MADEN, M. (2016). The cellular basis of scar-free skin regeneration in the spiny mouse. *Wound Rep Regen* **24**(1), 75-88.

- MADEN, M., CHAMBERS, D. & MONAGHAN J. (2017). Retinoic acid and the genetics of positional information. In *Regenerative Engineering and Developmental Biology: Principles and Applications*.
- NGUYEN, M., SINGHAL, P., PIET, J., SHEFELBINE, S.J., MADEN, M., VOSS, S.R. & MONAGHAN, J.R. (2017). Retinoic acid receptor regulation of epimorphic and homeostatic regeneration in the axolotl. *Development* **144**, 601-611.
- MADEN, M. (2017). Of salamanders and spiny mice: common features of regeneration and stem cells. *Current Stem Cell Reports* DOI: 10.1007/s40778-017-0086-4.
- MADEN, M. (2017). From mice to medicine: harnessing the power of regeneration. *Research Features* Issue 111 6-9.
- MADEN, M. (2017). The champion of regenerative medicine – the axolotl. Open Govt. Access. www.openaccessgovernment.org/champion-regenerative-medicine-axolotl/40526/ <http://edition.pagesuite-professional.co.uk/html5/reader/production/default.aspx?pubname=&edid=dcdb7688-87d6-4a76-b194-d44e2fa5cb01&pnum=194> -195.
- MADEN, M. (2018). The evolution of regeneration – where does that leave mammals? *Int J Dev Biol.* **62**, 369-372.
- MADEN M. (2018). Optimal skin regeneration after full-thickness thermal burn injury in the spiny mouse, *Acomys cahirinus*. *Burns* **44** (6), 1509-1520.
- MADEN, M., BRANT, J.O., RUBIANO, A., SANDOVAL, A.W., SIMMONS, C. COLLINS-HOOPER, H., JACOBSON, J., MITCHELL, R. & PATEL, K. (2018). Perfect chronic skeletal muscle regeneration in adult spiny mice, *Acomys cahirinus*. *Scientific Reports* 8:8920 DOI:10.1038/s41598-018-27178-7.
- STEWART, D.C., SERRANO, P.N., RUBIANO, A., YOKOSAWA, R., SANDLER, J., BRANT, J.O., MADEN, M. & SIMMONS, C.S. (2018). Dermal cells from the regenerative mammal, *Acomys*, retain unique biophysical function in vitro. *J. Biomechanics* doi.org/10.1016/j.jbiomech.2018.10.005.
- MADEN, M. (2018). The amazing spiny mouse, the champion of mammalian regeneration. *Open Govt. Access* May 29, pp186-187 ISSN 2516-3817. <https://www.openaccessgovernment.org/the-amazing-spiny-mouse-the-champion-of-mammalian-regeneration/44150/>
- MADEN, M. (2018). The regenerating spiny mouse and its potential for human therapy discovery. *Open Govt Access*. September 19. <https://www.openaccessgovernment.org/the-regenerating-spiny-mouse/52241/>
- HIROSE, K., PAYUMO, A.Y., CUTIE, S., HOANG, A., KHANG, H., GUYOT, R., LUNN, D., BIGLEY, R.B., YU, H., WANG, J., SMITH, M., GILLETT, E., MUROY, S.A., SCHMID, T., WILSON, E., FIELD, K.A., REEDER, D.M., MADEN, M., YARTSEV, M.M., WOLDGANG, M.J., GRUTZNER, F., SCANLAN, T.S., SZWEDA, L.I. BUFFENSTEIN, R., HU, G., FLAMANT, F., OLGIN, J.E. & HUANG, G.N. (2019). Evidence for hormonal control of heart regenerative capacity during endothermy acquisition. *Science* 10.1126/science.aar2018.
- MADEN, M. & BRANT, J.O. (2019). Insights into the regeneration of skin from *Acomys*, the spiny mouse. *Exp. Dermatol* (in press).
- BRANT, J.O., BOATWRIGHT, J.L., DAVENPORT, R., SANDOVAL, A.G.W., BARBAZUK, W.B. & MADEN, M. Comparative Transcriptomic Analysis of Dermal Wound Healing Reveals *De Novo* Skeletal Muscle Regeneration in *Acomys cahirinus*. *PLOS One* (in press)

Invitations to Speak at International Symposia

British Society for Developmental Biology (BSDB) Symposium "Pattern Formation", Oxford, UK, April 1978.

BSDB Symposium "Limb Development", Durham, UK, September 1979.

American Society of Zoologists Symposium "Principles & Problems of Pattern Formation in Animals", Seattle USA, December 1980.

Company of Biologists Discussion Meeting "Growth & the Development of Pattern", Sussex, UK, April 1982.

BSDB Symposium "Development & Evolution", Sussex, UK, April 1982.

3rd International Conference on Limb morphogenesis and Regeneration, Storrs, USA, June 1982.

European Developmental Biology Organisation International Embryological Conference "Natural & Experimental Restitution of Multicellular Organisms", Strasbourg, France, June 1982.

Mammalian Limb Regeneration Workshop, Irvine, California, USA, June 1983.

29th International Congress of Physiological Sciences, Sydney, Australia, September 1983.

BSDB Symposium "Matrices & Cell Differentiation", Aberystwyth, Wales, September 1983.

CIBA Symposium "Retinoids, Differentiation & Disease", London, UK, September 1984.

National Science Foundation Workshop "Future Directions for Vertebrate Regeneration", Santa Cruz, USA, February 1985.

French Society for Developmental Biology Symposium "Genetics & Biology of Development", Marseilles, France, June 1985.

International Society of Developmental Biology Symposium "New Discoveries & Technologies", Los Angeles, USA, August 1985.

BSDB Symposium "Limb Development", London, UK, September 1985.

British Society for Cell Biology Symposium (BCSB) "Cell Surfaces & the Extracellular Matrix", London, UK, September 1985.

3rd FASEB Summer Conference on Retinoids, Vermont, USA, June 1986.

NATO Advanced Research Workshop "Recent Advances in Regeneration Research", Athens, Greece, September 1988.

BSDB/BSCB Symposium "The Molecular Basis of Positional Signalling", St Andrews, Scotland, April 1989.

Hofmann-La Roche Conference "Retinoids & Teratogenesis: Molecular Mechanisms & Approaches", New York, USA, May 1989.

1st AIRR European Conference on Tissular & Post-Traumatic Regeneration, Geneva Switzerland, September 1990.

NATO Advanced Research Workshop "Limb Patterning", Santander, Spain, September 1990.

Royal Netherlands Academy of Arts & Sciences Workshop "Retinoids in Cancer & Development", Amsterdam, The Netherlands, October 1990.

Hofmann-La Roche Conference "Retinoids in Normal Development and Teratogenesis", Oxford, March 1991.

BSDB/BSCB Symposium "Developmental Nerve Cell Biology", Leeds, UK, April 1991.

4th International Conference on Limb Development & Regeneration, Asilomar California, USA, July 1992.

Leiden University Conference "Evolution & Development: Generative and Stability Principles of Biological Form", Leiden, The Netherlands, September 1992.

Little Foundation Workshop "Endocrine and Other Factors Affecting the Ovum, Embryo and Early Months of Pregnancy", Abingdon, UK, November 1992.

Craniofacial Morphogenesis Workshop, Iowa, USA, April 1993.

Marabou Symposium "Vitamin A: from Molecular Biology to Public Health", Stockholm, Sweden, June 1993.

BSDB Conference "Retinoic Acid in Development", Cambridge, UK, September 1993.

Hofmann-La Roche Conference "Retinoids, Gene Expression and Mammalian Development", Oxford, UK, September 1993.

European Retinoid Research Group Conference "Retinoids: New Trends in Research and Clinical Applications", Genoa, Italy, October 1993.

International Workshop on the Molecular Biology of Urodeles, Indianapolis, USA, October 1993.

Developmental Biology Conference, Moscow Russia, August 1994.
 Taniguchi Symposium on Developmental Biology, Bordeaux, France, September 1994.
 Indo-Japanese Conference “Morphogens, Genes and Development”, Mysore, India, February 1995
 European Developmental Biology Organisation Conference, Toulouse, France, July 1995
 European Retinoid Research Group Conference “Retinoids ‘95”, Sophia Antipolis, France,
 October 1995
 BSDB/BSCB Spring Symposium “Regeneration”, York, UK, March 1996
 1996 FASEB Summer Research Conference on Retinoids, Copper Mountain, Colorado, USA,
 June 1996
 Society of Experimental Biology ‘97 conference, New Orleans, USA, April 1997.
 US EPA Conference ‘Evaluating the Increase of Amphibian Malformations’, Shenandoah
 National Park, USA, April 1997.
 Japan Science and Technology Corporation conference ‘Metamorphosis and Regeneration: Keys
 to Tissue Regeneration’, Indianapolis, USA, August 1999.
 European Retinoid Research Group Conference “Retinoids ‘97”, Nice, France, October 1997.
 British Toxicological Society meeting, Guilford, Surrey, UK, April 1998.
 1998 FASEB Summer Research Conference on Retinoids, Snowmass, Colorado, USA, June
 1998.
 European Developmental Biology Organisation and International Society of Developmental
 Biologists conference, Oslo, Norway, June 1999
 Nutrition Society summer meeting, Glasgow, UK, July 1999.
 10th International Conference of the International Society of Differentiation, Houston, Texas,
 USA, October 1998.
 European Retinoid Research Group Conference “Retinoids ‘99”, Strasbourg, France, October
 1999
 International Agency for Research on Cancer working group meeting on ‘Retinoids’, Lyons,
 France, March 1999.
 33rd Winter Conference on Brain Research, Breckenridge, Colorado, USA, January, 2000.
 Royal College of Surgeons, Advances Courses in Plastic Surgery, Manchester, UK, April, 2000.
 2000 FASEB Summer Research Conference on Retinoids, Copper Mountain, Colorado, USA,
 June 2000.
 35th Winter Conference on Brain Research, Snowmass, Colorado, USA, January, 2002.
 EURESCO conference ‘Cellular and Molecular Basis of Regeneration’ Pisa, Italy, September
 2002.
 American Society for Neurochemistry, 33rd annual meeting, Palm Beach, Florida, USA, June
 2002.
 Biocomplexity IV; Regenerative Biology and Medicine, Bloomington, USA, May 2003.
 Royal Society discussion meeting on ‘New Directions in Tissue Repair and Regeneration’
 London, UK, September 2003.
 10th International Symposium on Neural Regeneration, Asilomar, California, USA, December
 2003.
 2004 FASEB Summer Research Conference on Retinoids, Pine Mountain, Georgia, USA, June
 2004.
 38th Winter Conference on Brain Research, Breckenridge, Colorado, USA, January 2005.
 British Thoracic Society winter meeting, London, UK, December 2005.
 2006 FASEB Summer Research Conference on Retinoids, Indian Wells, California, USA,
 June 2006.
 Scientific Lung Day Graz 2007, Medical University of Graz, Austria, April 2007.
 Lorentz Centre Workshop ‘Designing the bodyplan: developmental mechanisms’ Leiden
 University, Holland, June 2007
 6th INMED/TINS Conference ‘From basic research to novel treatments: lost in translation’
 Marseille, France, September 2007.

Japanese Society for Retinoid Research Conference ‘Retinoids and Tissue Formation’
Tokyo, Japan, November 2007.

Transatlantic Airway Conference ‘Stem/progenitor cells and lung repair’ Lucerne,
Switzerland, January 2008.

FASEB Summer Research Conference on Retinoids, New Haven, Connecticut, USA, June,
2008

Society of Developmental Biology 68th Annual meeting, San Francisco, July 23-27, 2009
(oral poster presentation).

FASEB Summer Research Conference on Retinoids, Carefree Resort, Arizona, USA, June
13th – 18th, 2010.

11th International Conference on Limb Development & Regeneration, Williamsburg, VA,
July 13-17, 2010 (session chair)

Society of Developmental Biology 69th Annual meeting, Albuquerque, New Mexico, August 5-9,
2010 (poster presentation).

EMBO Conference ‘Molecular and Cellular Basis of Regeneration & Tissue Repair, Sesimbra
Portugal, September 26-30, 2010 (2 poster presentations).

Gordon Conference ‘Tissue Repair & Regeneration’ New Hampshire, 4-5 June, 2011 (poster
presentation).

International Cartilage Repair Society 10th Annual World Congress, Montreal Canada, May12-15,
2012.

EMBO Conference ‘ Molecular & Cellular Basis of Regeneration & Tissue Repair, Oxford UK,
September 2-6, 2012 (session chair).

International Cartilage Repair Society summit, Tallinn, Estonia, May 30th – June 1st, 2013 invited
talk entitled “Why can’t mammals regrow their limbs?”.

SENS Research Foundation conference, Queen’s College Cambridge, UK September 3 – 7th 2013,
invited talk entitled “Regeneration in the adult organism – a cure for ageing?”.

2013 International Symposium on Development, Morphogenesis and Stem Cells, National Yang-
Ming University/Taipei Veterans General Hospital, Taipei, Taiwan, October 5 - 6th, invited
talk entitled “ The regeneration of complex structures from Axolotls to mice: the evolution of
the blastema and its stem cells”.

International Symposium on Wound Regeneration and Repair, National Cheng Kung University,
Tainan, Taiwan, October 8th 2013, invited talk entitled “Complex tissue regeneration in a new
mammalian model system, the African spiny mouse”.

Gordon Conference on Tissue Repair and Regeneration, 8th – 12th June, 2015, invited talk entitled
“Towards a more regenerative skin wounding outcome in mammals”.

IIAA Live conference, Royal Institution London UK, 8th September 2015, invited talk entitled
“Vitamin A, the Holy Grail of Rejuvenation”.

13th Annual IFATS Meeting, New Orleans, Nov 5-8th 2015, talk entitled “Regeneration and Stem
Cells in the Spiny Mouse: A Unique Mammalian Regeneration Model”

The Scar-Free Foundation inaugural symposium, London UK, 10th – 11th October 2017, talk
entitled “Regeneration in the axolotl and spiny mouse models”

International Skin Scarring and Keloid Symposium, New York, 3rd-4th November 2017, talk
entitled “The spiny mouse: an adult mammalian model for scar-free healing”.

Conferences Organised:

BSDB Conference "Retinoic Acid in Development", Cambridge, September 1993

5th International Limb Development and Regeneration Conference, York, March 1996.

European Retinoid Research Group Conference “Retinoids ‘97”, Nice, France, October 1997

European Retinoid Research Group Conference “Retinoids ‘99”, Strasbourg, France, October
1999

35th Winter Conference on Brain Research, Snowmass, Colorado, USA, January, 2002 (session organizer).

38th Winter Conference on Brain Research, Breckenridge, Colorado, USA, January, 2005 (session organizer).

South East Society of Developmental Biology, University of Florida, May 17-19th, 2011.

13th International Limb Development and Regeneration Conference, St Petersburg, Florida, June 28th – July 1st, 2015.

Seminar Invitations

Numerous invitations to speak throughout the UK, Europe and USA and in Japan and Taiwan.