doc. RNDr. Martin KUNDRÁT, PhD.

ACADEMIC DEGREES

2015 - Docent in Evolutionary Organismal Biology, Uppsala University, Uppsala, Sweden
2013 - Docent in Zoology Palacký University, Olomouc, Czech Republic; 2013
2005 - PhD. in Zoology Charles University, Prague, Czech Republic; 2005
2001 - RNDr. in Zoology Charles University, Prague, Czech Republic; 2001
1992 - Mgr. in Biology-Chemistry Pavol Jozef Šafárik University, Košice, Slovak Republic;
1992. First class honors: Red Diploma + Chancellor Award

FORMER PROFESSIONAL AFFILIATION

2008-2010 - Senior Researcher in Paleobiology
Slovak Academy of Sciences, Geological Institute, Banská Bystrica, Slovakia

2003-2008 - Postdoctoral Fellowships in Evo-Devo Biology
Clemson University, Clemson, South Carolina, USA; 2007–2008
Project: Heterochrony between migration of the cephalic neural crest and early organogenesis of the crocodiles and birds.

McGill University, Montreal, Quebec, Canada; 2006–2007
Project: Experimental induction of a dinosaurian tail in birds.

Macquarie University, Sydney, New South Wales, Australia; 2005–2006
Project: Fate-mapping of neural crest migration in the head of the Australian lungfish, *Neoceratodus forsteri.*

Wesleyan University, Middletown, Connecticut, USA; 2003–2004
Project: Evolutionary constraints in developmental patterning of the head region in vertebrates.
This fellowship in the Burke's lab took place after the Ph.D. thesis was finished but prior to the thesis defence itself.

FORMER ACADEMIC APPOINTMENTS

Researcher – Charles University, Faculty of Natural Sciences, Department of Zoology, Prague, Czech Republic; 2003–2005

Assistant – Charles University, First Faculty of Medicine, Institute of Histology and Embryology, Prague, Czech Republic; 2003–2004

Postgraduate Student – Charles University, Faculty of Natural Sciences, Department of Zoology, Prague, Czech Republic; 1999–2002

Head of the Paleontological Research Station – Slovak National Museum, Bratislava, Slovakia; 1997–1998

Curator of Vertebrate Paleontology – Gemer-Malohont Museum, Rimavská Sobota, Slovakia; 1996–1997

Researcher – Pavol Jozef Šafárik´s University, Faculty of Natural Sciences, Department of Anthropology and Zoology, Slovakia; 1992–1996

PENDING PROJECT PROPOSALS

Evolutionary adaptations towards miniaturization and gigantism in avian dinosaurs
Project ID: 2015-04310
Position: Principal Investigator
Funding Source: Swedish Research Council, Sweden

CURRENT PROJECTS AWARDED

Quantitative analysis of bone microstructure in bird-like dinosaurs and early birds: implications to thermoregulation and paleogenomics

Project ID: 20150130
Position: Principal Investigator
Funding Source: Paul Scherrer Institut, Swiss Light Source, Switzerland

2015 – Exploring unique aspects of Australian Dinosaurs: (a) post-cranial structure of *Leaellynasaurus amicagraphica*, and (b) locomotion of Triassic dinosauromorphs
Project ID: M8910
Position: Co-proposer
Funding Source: The Australian Synchrotron, Australia

2012-16 – Developmental modularity of cerebral tissues in the evolution of avian locomotion using high-resolution imaging and geometric morphometry
Project ID: P302/12/1207
Position: Author of the project; Investigator Duration: Jan 1, 2012 – Dec 31, 2016
Funding Source: Czech Science Foundation, Czech Republic

PAST PROJECTS AWARDED

2011-13 – The skeletal microstructure of oldest birds: ontogeny and novel diagnosis of basal avian phenotypes
Project ID: EC-849, EC-943
Position: Principal Investigator Duration: Sep 1, 2011 – Dec 31, 2013
Funding Source: European Synchrotron Radiation Facility, France

2010-11 – Microstructural design of embryonic teeth in dinosaurs
Project ID: EC4-689
Position: Principal Investigator Duration: Aug 1, 2010 – Dec 31, 2011
Funding Source: European Synchrotron Radiation Facility, France

2009 – 10. Anniversary Conference of the Czech, Polish and Slovak Paleontologists
Position: Author of the project Duration: Sep 1, 2009 – Feb 28, 2010
Funding Source: Visegrad Fund, Slovak Republic

2009 – Correlation of neurocranial morphology and postcranial parameters to assess upon specific locomotory adaptations in birds
Project ID: DE-TAF-5552
Position: Principal Investigator Duration: April 20 – May 8, 2009
Funding Source: Synthesys – Synthesis of Systematic Resources, The European Union-funded Integrated Infastructure Initiative

2008 – Permian-Triassic evolution of the local climate over the Central Pangaea based on bone microstructure of continental tetrapods
Project ID: FR-TAF-5138
Position: Principal Investigator. Duration: November 1 – December 12, 2008, extended until December 2009
Funding Source: Synthesys Program, The European Union-funded Integrated Infastructure Initiative Granting Agency

2008 – Exploration of the Jurassic Vertebrate Fauna in the Xianjing Province of China: Sino-American Junggar Basin Expedition
Position: Principal Investigator Duration: August 1, 2008 – December 31, 2009
Funding Source: The Paleontological Society Sepkoski International Research Program, USA

2007 – Evolutionary trends in the abbreviation of the tail skeleton in non-avian and avian theropods
Position: Principal Investigator Duration: November 1, 2007 – December 31, 2008
Funding Source: Scholarship Committee, Field Museum of Natural History, Chicago, USA

2007 – Evolutionary patterns of the tail abbreviation and its bearing on phenotypic modulation of the pelvic region in terrestrial and volant theropods

Position: Principal Investigator Duration: July 1, 2007 – December 31, 2008
Funding Source: The Jurassic Foundation, USA

2005 – Fate-mapping of neural crest migration in the head of the Australian lungfish, *Neoceratodus forsteri*
Position: Principal Investigator Duration: October 1, 2005 – April 15, 2006
Funding Source: Macquarie University, Sydney, Australia

2005 – Oral facial development and regeneration
Position: Co-Investigator Duration: January 1 – December 31, 2005
Funding Source: COST, European Cooperation in the Field of Scientific and Technical Research, European Union

2004 – Neurocraniology of the oviraptorid theropods
Position: Co-Investigator Duration: January 1, 2004 – December 31, 2005
Funding Source: Polish Academy of Sciences, Warsaw, Poland

2004 – Developmental programme of the posthyoid cranial paraxial mesoderm: Experimental evaluation of hypothetic segmentation of post-hypophysis/pre-occipital vertebrate neurocranium and NC-cells involvement in condensed braincase structures
Position: Principal Investigator Duration: April 1, 2004 – December 31, 2004
Funding Source: Wellcome Trust/Cancer Research UK Gurdon Institute of Cancer and Developmental Biology

2003 – Tissue regionalization during early development: Reasons for revaluation of the segmentation theory of vertebrate head region?
Project ID: 122/2003/B BIO/PřF
Position: Principal Investigator Duration: January 1, 2004 – December 31, 2004
Funding Source: Grant Agency of Charles University, Prague, Czech Republic

2003 – Evolutionary constraints in developmental patterning of the head region in vertebrates
Position: Principal Investigator Duration: October 1, 2003 – March 31, 2004
Funding Source: NATO Science Fellowships Programme, Prague, Czech Republic

2003 – Morphogenetic differences in the post-neurula patterning of the head region in vertebrates and their 3D-digital reconstruction
Project ID: KJB6111301
Position: Principal Investigator. Duration: January 1, 2003 – December 31, 2004
Funding Source: Granting Agency of Academy of Sciences of the Czech Republic, Prague, Czech Republic

2002 – Distribution of avian characters in neurocrania of maniraptoriform theropods
Position: Principal Investigator Duration: September 9 – 27, 2002
Funding Source: Office of Grants and Fellowships, American Museum of Natural History, New York, USA

2002 – Reinterpretation of the braincase structure in lambeosaurine hadrosaurs
Position: Principal Investigator Duration: August 2 – September 5, 2002
Funding Source: The Paleontological Society, International Research Program, New Orleans, USA

2002 – Neurocranial ossification patterns in recent crocodilians: Implications to developmental plasticity of archosaur braincase
Position: Principal Investigator Duration: July 22-30, 2002
Funding Source: Scholarship Committee, Field Museum of Natural History, Chicago, USA

2002 – Neurocranial development in lambeosaurine hadrosaurs
Position: Principal Investigator Duration: August 2, 2002 – September 5, 2002
Funding Source: The Cooperating Society of Royal Tyrrell Museum of Palaeontology, Drumheller, Alberta, Canada

2001 – Neurocranial anatomy and reconstruction of the central nervous system in juvenile specimens of hadrosaurid dinosaurs

Position: Principal Investigator Duration: August 1, 2001 – December 31, 2002
Funding Source: The Jurassic Foundation, Drumheller, Alberta, Canada

2000 – Embryonic development of the skull in some recent and extinct archosaurs (crocodiles, birds and dinosaurs)
Project ID: 136/2000/B BIO/PřF
Position: Principal Investigator Duration: January 1, 2000 – December 31, 2002
Funding Source: Grant Agency of Charles University, Prague, Czech Republic

2000 – Embryonic skeletal morphogenesis and braincase anatomy of non-avian dinosaur: Testing the hypothesis of an intermediate dinosaur morphotype position between crocodilian and avian skull patterns
Position: Principal Investigator Duration: January 1, 2000 – June 30, 2002
Funding Source: The Jurassic Foundation, Drumheller, Alberta, Canada

1999 – Taxonomic affinity of the dinosaur parafamily Faveoloolithidae: CT analysis of a faveoloolithid oospecimen containing embryonic remains
Position: Principal Investigator Duration: July 1, 1999 – September 30, 2000
Funding Source: The Paleontological Society, International Research Program, New Orleans, USA

1998 – *Parailurus* versus *Ailurus*: Craniodental comparative analysis and phylogenetic determination of the apomorphy/plesiomorphy polarity of lesser panda basicranial characters
Position: Principal Investigator Duration: October 26 – December 11, 1998
Funding Source: The Paleontological Society, International Research Program, New Orleans, USA
Funding Source: Office of Grants and Fellowships, American Museum of Natural History, New York, USA
Funding Source: Office of Grants and Fellowships, Field Museum of Natural History, Chicago, USA

1996 – International paleontological project „Expedition Hajnáčka 1996-2000“
Position: Principal Investigator; Leader of the 1996 field season
Duration: August 18-30-October 9-19, 1996
Funding Source: TAURIS, Inc., Rimavská Sobota, Slovakia

EXPERIMENTAL SKILLS (in alphabetical order)

3D virtual imaging and animation using the Volume Graphics Studio Max (personal course certificate, Heidelberg, Germany, 2013) and the Mimics software (personal course certificate, Innsbruck, Austria, 2012).

Ablations (glass needle, tungsten wire needle, cauterizer) on lungfish and chick embryos.

Animal preparation (reptilian and avian skeletons) and dissection (lamprey, shark, fish, salamander, frog, lizard, snake, crocodile, bird, mouse, and rat).

Beading (Fgf4, Fgf8, Noggin, Shh) applied to chick embryos.

Biomechanical computer simulation and Finite element analysis – Introduction using the Rhinoceros, ImageJ, Ansys (personal course certificate, Els Hostalets de Pierola, Spain, 2014)

Bone/tooth histology (virtual and real) applied on the fossil and extant tetrapods found in Argentina, Australia, Canada, China, France, Germany, Iran, Madagascar, Mongolia, Morocco, Slovakia, Sweden, Thailand.

Coding in R.

Computer tomography (crocodilian, dinosaur, avian neurocrania), nuclear magnetic resonance (crocodilian and avian heads), and synchrotron (dinosaur, crocodile and bird embryos, dinosaur and pterosaur cranial and postcranial bones, *Archaopteryx* remains) data analysis.

Fossil preparation (chemical procedure, vibration needle technique).

Immunohistochemistry on sections (chondroitin sulphate, HNK-1, Q¢PN, TUNNEL, 3B5, 62.1E6) applied variously on lungfish, crocodile, ostrich, duck, chick and quail embryos.

Functional Morphology and Biomechanics - Introduction (personal course certificate, Barcelona, Spain, 2014) using the Past and Geomagic softwares.

Geometric morphometrics and Phylogeny using the MorphoJ software (personal course certificate, Els Hostalets de Pierola, Spain, 2013).

In situ hybridization on sections (*Bmp4, Fgf8, Noggin, Shh*) done on chick embryos.

In vivo injection (India Ink) of the vascular system of ostrich and chick embryos.

Laser confocal microscopy (DiI, Texas Red IgG, Alexa Fluor IgG 488, SYBR Green I, TO-PRO-3) done on chick and lungfish embryos.

Phylogenetic analysis.

Preparation of chick RNA-probes.

Scanning electron microscopy and energy dispersive X-ray spectroscopy of the eggshell and bone structure of dinosaurs.

Staining (Alcian Bule, Eosin, Harris Haematoxylin, HBQ) and sectioning (rotary paraffin microtome, vibratome) histological procedures applied variously on lungfish, frog, lizard, crocodile, ostrich and chick embryos.

Modeling using either classic (wax-plate method) or digital (Ellipse, Imagreg, IRIS-Explorer, Surdriver) techniques.

Transplantations using the tungsten needle on chick-quail chimaeric system and micropins on chick embryos.

Vital labeling using DiI done on lungfish and chick embryos.

Wholemount and on section *in situ* hybridization (*Bmp4, Bmp2, Fgf8, Scleraxis, Slug*) on chick, duck, quails and turtle embryos.

Wholemount staining and immunostaining (Alcian Blue-Alizarin, HNK-1, MF20, Pax1, Pax7, 3A10) applied variously on lamprey, skate, sturgeon, paddlefish, lungfish, lizard, snake, turtle, crocodile, ostrich, duck, quail and chick embryos.

EVO-DEVO RESEARCH EXPERIENCE

Lungfish Laboratory, October 2005-April 2006
Prof. Jean Joss – Macquarie University, Department of Biological Sciences, Sydney, Australia

Department of Orthopaedic Surgery, March 2004
Assoc. Prof. Richard A. Schneider – California University at San Francisco, School of Medicine, San Francisco, USA

Hall-Atwater Laboratories, October 2003-March 2004
Assoc. Prof. Ann C. Burke – Wesleyan University, Department of Biological Sciences, Middletown, USA

Laboratory for Evolutionary Morphology, June-July 2003
Dr. Shigeru Kuratani – Center for Developmental Biology, RIKEN, Kobe, Japan

PALEO RESEARCH EXPERIENCE

Museum National d´Histoire Naturelle, 2008, 2009
Dr. Sébastien Steyer – CNRS, Paris France

Institute of Vertebrate Paleontology and Palaoanthropology, 2007, 2009, 2011, 2013
Dr. Xing Xu, Prof. Zhonghe Zhou – Chinese Academy of Sciences, Beijing, China

Paleontological Center, 2007
Prof. Rinchen Barsbold – Mongolian Academy of Sciences, Ulaan Baatar, Mongolia

Institute of Palaeobiology, 2000, 2002, 2004, 2005
Prof. Halzska Osmólska – Polish Academy of Sciences, Warsaw, Poland

Dinosaur Research, 2000, 2001, 2002, 2005, 2008
Dr. Donald B. Brinkman, Prof. Philip J. Currie – Royal Tyrrell Museum of Palaeontology, Drumheller, Canada

Department of Palaeozoology, 2000
Prof. Hans C. Bjerring – Swedish Museum of Natural History, Stockholm, Sweden

Department of Natural Sciences, 1999, 2000
Dr. Arthur R. I. Cruickshank – New Walk Museum, Leicester, UK

Division of Vertebrate Paleontology, 1998, 2002
Dr. Mark A. Norell, Dr. Richard H. Tedford – American Museum of Natural History, New York City, USA

Department of Geology, 1998, 2002, 2007
Dr. John J. Flynn, Dr. Peter J. Makovicky – Field Museum of Natural History, Chicago, USA

EXPEDITIONS-FIELD WORK

2014, Co-Leader – New Dinosaur Nesting Area in Henan, China
Chinese Academy of Geological Sciences, Beijing + Henan Geological Museum, Zhengzhou, China

2013, Co-Leader – Iranian-Swedish Dinosaur Expedition, Alborz and Esfahan regions, Iran
Zanjan University, Zanjan, Iran

2012; Co-Leader – Russian-Swedish Dinosaur Expedition, Altay, Russia
Siberian State Industrial University, Novokuznetsk, Kemerovo, Russia

2011; Co-Leader – Xixia Dinosaur Egg Expedition, Henan, China
Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, Beijing, China

2013, 2011; Co-Leader – Siberian Early Tetrapod Expedition, Kemerovo, Russia
Siberian State Industrial University, Novokuznetsk, Kemerovo, Russia

2010; Co-Leader – Argentinian-Swedish Dinosaur Expedition, Río Negro, Argentina
Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina

2007 – Upper Cretaceous, Bayn Shire Formation, Gobi, Mongolia
Korean-Mongolian International Dinosaur Project
Paleontological Center, Mongolian Academy of Sciences, Ulaan Baatar, Mongolia
Korean Institute of Geology, Mining and Materials, Daejeon, South Korea

2000, 2001, 2005 – Upper Cretaceous, Dinosaur Provincial Park, Alberta, Canada
Royal Tyrrell Museum of Palaeontology, Drumheller, Canada

2002, 2005 – Upper Cretaceous, Dry Island and Buffalo Jump Park Formation, Alberta, Canada
Royal Tyrrell Museum of Palaeontology, Drumheller, Canada

2002 – Lower Cretaceous Cloverly Formation, Wyoming, USA

Field Museum of Natural History, Chicago, Illinois, USA

1996, Co-Leader – Upper Pliocene, Hajnáčka, Slovakia
Gemer-Malohont Museum, Rimavská Sobota, Slovakia

EDITORIAL WORK

Editor: The Central European Journal of Biology, 2007-2009
Category: Evolutionary and Developmental Morphology
Publisher: Versita, co-published with Springer-Verlag

Editor: Journal of West Asian Geosciences, 2014-…
Category: Vertebrate Paleontology
Publisher: University of Zanjan

Language Editor: Dinosauria in Asia
Format: Book
Author: Prof. Dong Zhiming

INVITED POSITIONS

Invited Researcher – European Synchrotron Radiation Facility, Paris, France, 2013

Invited Researcher – European Synchrotron Radiation Facility, Paris, France, 2012

Invited Fellow – Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, Beijing, China, 2009

Invited Professor – Muséum national d'Histoire naturelle, Paris, France, June, 2009

Invited Professor – Muséum national d'Histoire naturelle, Paris, France, November, 2008

ESRF Paleo-Initiave Group – European Synchrotron Radiation Facility, Paris, France, October 2009

INVITED LECTURES

2015 Mar 24 – Canterbury Museum, Christchurch, New Zealand
Title: The eighth specimen of *Archaeopteryx* ?

2014 Nov 26 – Chinese Academy of Geological Sciences, Institute of Geology, Beijing, China
Title: High-resolution imaging study of *Archaeopteryx*

2014 Nov 21 – Zoológia 2014 Congress, Prešov, Slovakia
Plenary Lecture - Title: The origin of the avialan dinosaurs: the unknown *Archaeopteryx*

2013 Dec 5 – Korea-Mongolia International Dinosaur Symposium, South Korea
Title: X-ray synchrotron microtomography: applications in dinosaur paleobiology

2013 Sep 23 – Tehran University, Tehran, Iran
Title: Archosaur paleoembryology: challenging new frontiers

2013 Sep 19 – Workshop on Vertebrate Paleontology, Zanjan University, Iran
Title: Multidisciplinary study of the dinosaur-to-bird evolutionary transition: looking for the critical fossils in Iran

2013 Sep 19 – Workshop on Vertebrate Paleontology, Zanjan University, Iran
Title: Modern vertebrate paleontology: integration of high-resolution 3D imaging techniques

2012 Nov 22 – Zoológia 2012 Congress, Zvolen Slovakia
Plenary Lecture - Title: Archosaur paleoembryology: challenging new frontiers

2012 Nov 22 – Zoológia 2012 Congress, Zvolen Slovakia
Public Popular Lecture - Title: Patagonian dinosaurs

2011 May 27 – Abteilung Molekulare Embryologie, Universität Freiburg, Germany
Title: Archosaur paleoembryology: challenging new frontiers

2009 Dec 14 – Evolutionary Biology Center, Uppsala University, Uppsala, Sweden
Title: Cephalic neural crest cells and their migratory patterns in non-model vertebrates

2009 Nov 20 – Institute of Vertebrate Paleontology and Paleoanthropology, Beijing, China
Title: Major phenotypes of the vertebrate skull

2009 Nov 20 – Institute of Vertebrate Paleontology and Paleoanthropology, Beijing, China
Title: Intramembranous and endochondral ossification of cranial bones

2009 Nov 12 – Institute of Vertebrate Paleontology and Paleoanthropology, Beijing, China
Title: *In ovo* development of chondrocranium

2009 Nov 12 – Institute of Vertebrate Paleontology and Paleoanthropology, Beijing, China
Title: The cellular origin of teeth

2009 Nov 6 – Institute of Vertebrate Paleontology and Paleoanthropology, Beijing, China
Title: The cellular origin of skull

2009 Oct 13 – Paleontological Initiative Meeting, European Synchrotron Radiation Facility, Grenoble, France
Title: *In ovo* imaging of dinosaur embryonic patterns and the reptile-to-bird transition

2009 Jun 15 – European Synchrotron Radiation Facility, Grenoble, France
Title: Reconstruction of the dinosaur life before hatching: an integrative approach

2009 Jun 4 – Museum National d'Histoire Naturelle, Paris, France

Titie: Neural crest cells and paradigms in the light of new experimental models of chordates and vertebrates

2009 May 26 – Department of Biological Sciences, University of Calgary, Calgary, Canada
Title: Cephalic neural crest cells and their migratory patterns in non-model vertebrates

2009 Apr 11 – Goseong Dinosaur World Expo 2009 – Goseong International Dinosaur Symposium, South Korea
Title: The life before hatching: saga of a theropod dinosaur

2008 Sep 24 – Royal Tyrrell Museum of Palaeontology, AB, Canada
Title: Developmental innovations in the evolution of theropods and birds

2007 Sep 28 – Institute of Vertebrate Paleontology and Paleoanthropology, Beijing, China
Title: Toward the evolutionary phenotype of a bird

2005 Dec 8 – Australian Museum, Sydney, NSW, Australia
Title: Theropod-bird evolutionary transition: the causa of three digits

2005 Nov 3 – Department of Biological Science, Macquarie University, Sydney, NSW, Australia
Title: Identity of digits in the avian hand

2005 Sep 2 – Museum National d'Histoire Naturelle, Paris, France
Title: Theropod-bird evolutionary transition: the causa of three digits

2005 Jul 7 – Dinosaur Provincial Park, Royal Tyrrell Museum of Palaeontology, AB, Canada
Title: Frozen in time: dinosaur embryonic life

2005 Jun 15 – Riverbanks Zoo, Columbia, SC, USA
Title: Insights into fossil eggs: reconstruction of dinosaur embryos

2005 Jun 13 – Department of Biological Sciences, University of South Carolina, Columbia, SC, USA
Title: The origin of birds: challenge for an integrative research approach

2004 Apr 14 – Department of Orthopaedic Surgery, University of California at San Francisco, San Francisco, CA, USA
Title: Migration of cephalic neural crest cells in living archosaurs

2004 Mar 23 – Department of Biological Sciences, Wesleyan University, Middletown, CT, USA
Title: Dynamics and heterochrony of the migratory pathways of the cephalic neural crest cells in crocodilian archosaur *Crocodylus niloticus* and avian theropod *Struthio camelus*

2003 Jul 4 – Laboratory for Evolutionary Morphology, Center for Developmental Biology, RIKEN, Kobe, Japan
Title: Looking for ancestry of birds: developmental data versus paleontological record

2001 Sep 21 – Department of Biological Sciences, University of Calgary, Calgary, Canada
Title: Developmental vestiges of the avian first metacarpal

2001 Aug 9 – Field Station, Royal Tyrrell Museum of Palaeontology, AB, Canada
Title: Developmental remains of the avian first metacarpus

2001 Apr 25 – Department of Zoology and Anthropology, Palacký University, Olomouc, Czech Republic
Title: Can we know detailed structure of dinosaur soft tissue?

2001 Apr 24 – Moravian Museum, Brno, Czech Republic
Title: Dinosaur Provincial Park, Alberta, Canada

2001 Mar 10 – National Museum, Prague, Czech Republic
Title: Can we know soft anatomy of dinosaurs?

PROFESSIONAL MEETINGS ATTENDED

2014 Nov – 74th Annual Meeting of Society of Vertebrate Paleontology, Berlin, Germany
Co-Convenor of the Symposium: *Archaeopteryx* – the iconic fossil in modern view
Oral presentation: The Daiting specimen of *Archaeopteryx*

2014 Sep – 4th International Paleontological Congress, Mendoza, Argentina
Oral presentation 1: The eights specimen of *Archaeopteryx*
Oral presentation 2: *In ovo* 3D preservation of a titanosaurian embryonic skull

2011 Dec – Lundadagarna XII, University of Lund, Lund, Sweden
Oral presentation: Dinosaur embryology: challenging new frontiers

2009 Apr 11 – Goseong International Dinosaur Symposium, Goseong, South Korea
Oral presentation: The life before hatching: Saga of a theropod dinosaur

2008 Jun 19-22 – Evolúcia Quo Vadis? Československá biologická spoločnosť, Donovaly, Slovakia
Oral presentation: Neural crest-dependant odontogenic module conserved in the evolution of craniofacial region in fish and tetrapods.

2005 Sep 24-25 – Dinosaur Park Symposium, Royal Tyrrell Museum of Palaeontology, Drumheller, Alberta, Canada
Oral presentation: The ascent of dinosaur embryology: Learning from exceptional specimens.

2004 Jul 27-Aug 1 – 7th International Congress of Vertebrate Morphology, Florida Atlantic University, Boca Raton, Florida, USA
Oral presentation: Skeletal and dental development of therizinosauroid embryos from China.
Poster presentation 1: Two morphotypes of *Velociraptor* neurocranium.
Poster presentation 2: An oviraptorid neurocranium from Mongolia.
Poster presentation 3: Virtual 3-D reconstruction of embryonic head structures from physical sections.

2004 May 24-29 – 17th Working Meeting of the IUCN-SSC Crocodile Specialist Group, Darwin, Northern Territory, Australia
Oral presentation: The crocodilian model in current developmental and evolutionary studies.

2002 Feb 15 – Zoological Days Conference, Czech Zoological Society, Brno, Czech Republic
Oral presentation: Ontogeny and evolution of the avian wing autopodium: Looking for the ancestry of birds.

2001 July 21-26 – 6th International Congress of Vertebrate Morphology, University of Jena, Jena, Germany
Oral presentation 1: On the embryonic neural endocranium of lambeosaurid hadrosaurs.
Oral presentation 2: Developmental remnants of the first avian metacarpus.
Poster presentation 1: Structure of the embryonic parabasisphenoid in a therizinosaurid dinosaur.
Poster presentation 2: Presence of the antesynotic tectum in embryonic chondrocranium of *Anguis fragilis.*

2001 – Annual Conference of the Czech Herpetological Society, Kraslice, Czech Republic, May 5
Oral presentation 1: Are birds dinosaurs?
Oral presentation 2: Dinosaur Provincial Park, Alberta, Canada.

2000 – Annual Conference of the Czech Herpetological Society, Lanžhot, Czech Republic, May 6
Oral presentation: Development of dinosaur embryos.

2000 – 1st Symposium on European Dinosaurs, Düsseldorf, Germany, March 14-18
Poster presentation: Review of the dinosaur records from the Central Europe – Czech Republic and Slovakia.

1999 – 1st International Symposium on Dinosaur Eggs and Babies, Isona, Lleida, Sain, September 23-26
Poster presentation: CT detection of embryonic remains within a faveoloolithid dinosaur egg from Mongolia.

1997 – 5th International Congress of Vertebrate Morphology, University of Bristol, Bristol, United Kingdom, July 12-17
Oral presentation: A morphological resolution to the enigma of lesser panda phylogeny.
Poster presentation: On the prenatal morphology of nasal capsule of *Pseudopus apodus.*

1998 – 58th Annual Society of Vertebrate Paleontology Meeting, Snowbird, Utah, USA, September 30- October 3
Poster presentation 1: Uppermost Triassic dinosaur ichno-parataxa from Slovakia.
Poster presentation 2: Comments on the significance of integumentary impression of the Early Jurassic theropod *Eubrontes minusculus*.

1998 – 3rd Asian Herpetological Meeting, Almaty, Kazakhstan, September 1-5
Oral presentation 1: Embryonic record of the basitemporal bone in *Pseudopus apodus*.
Oral presentation 2: Determination of premandibular and mandibular visceral elements of the fully formed anguine chondrocranium.

1997 – 3rd World Congress of Herpetology, Prague, Czech Republic, August 2-10
Oral presentation: Structure of the orbitotemporal region of the anguid lizard *Pseudopus apodus.*
1998 – Euro-American Mammal Congress: Challenges in Holarctic Mammalogy, Universidad de Santiago de Compostela, Santiago de Compostela, Spain, July 19-24
Oral presentation: The first *Parailurus* skull from Slovakia: A new light on the late phase of lesser panda evolution.
Poster presentation: Pliocene lesser panda world distribution.

1997 – 57th Annual Society of Vertebrate Paleontology Meeting, Field Museum, Chicago, Illinois, USA, October 8-11
Poster presentation: New dental remains of an extinct lesser panda – morphotype or new species?

TEACHING-RELATED ACTIVITIES AND PEDAGOGICAL EDUCATION

University-level teaching
Uppsala University, Evolutionary Biology Centre, Uppsala, Sweden
Development and Evolution, 2012-2014 (Co-Lecturer)

Palacky University, Faculty of Natural Sciences, Olomouc, Czech Republic
Developmental Evolution of Vertebrates, 2012-2013 (Lecturer)

Charles University, First Faculty of Medicine, Prague, Czech Republic
Human Histology and Embryology, 2003-2004 (Assistant, Co-Examiner)

Charles University, Faculty of Natural Sciences, Prague, Czech Republic
Anatomy of Animals, 1999-2003 (Assistant)
Comparative Vertebrate Morphology, 2000-2001 (Assistant)
Vertebrate Zoology, 2000-2003 (Assistant)
Zoological Field Excursion, Vertebrates, 2000-2002 (Assistant)

Pavol Jozef Šafárik´s University, Faculty of Natural Sciences, Košice, Slovakia
Comparative Anatomy and Morphology of Vertebrates, 1994-1995 (Lecturer, Examiner)
Systematics and Phylogeny of Vertebrates, 1993-1996 (Assistant)
Zoological Field Excursion, 1993-1996 (Assistant)

Student advising

Special courses taken
PhD Supervising Course, Uppsala University, Sweden – Certificate
Recruitment Seminar and Workshop, Cubiks + Uppsala University, Sweden
A Long Distance Supervision, Uppsala University, Sweden

Supervisor of PhD projects
Shen Caizhi, 2014-…
Chinese Academy of Geological Sciences, China

Supervisor of Master projects
Näsvall Karin, 2012-...
Larsson Dennis, 2014
Hogvall Matthias, 2011-2012
Department of Organismal Biology, Evolutionary Biology Centre, Uppsala University, Sweden
Tvarožková Barbora, 2003-2006 – defended with first class honours
Department of Zoology, Faculty of Natural Sciences, Charles University, Czech Republic

Co-Supervisor of Master projects
Majláth Igor, 1994-1996
Martinková Agáta, 1994-1996
Department of Anthropology and Zoology, Faculty of Natural Sciences, Pavol Jozef Šafárik´s University, Slovakia

Co-Supervisor of Bc. projects
Littva Juraj, 2010-2011
Department of Geology and Paleontology, Comenius University, Bratislava, Slovakia

Invited examiner - Ph.D. committee

Sanchez Sophie, 2008 - De la transition poisson-tétrapode à la radiation des tétrapodes anciens : apport des microstructures osseuses dans les reconstitutions paléobiologiques, paléoenvironnementales et les modalités évolutives
Départment of Histoire de la Terre, Muséum national d´Histoire naturelle, Paris, France

Vincent Fernandez, 2010 - Détection et imagerie d'embryons fossilés in ovo par microtomographie synchrotron: Étude des embryons énigmatiques de Phu Phok (Crétacé Inférieur, Thaïlande)
European Synchrotron Radiation Facility, Paris, France
DIPLOMAS
Docent Diploma and Certificate
PhD Diploma
RNDr. Diploma
Master Diploma: First Class Honors

MY MAJOR DISCOVERIES

1. **Developmental pentadactyly in birds: chick and ostrich.**

2. **Neural crest dependent formation of the both permanent and transitory dentitions in the Australian lungfish.**

3. **The heterochronic shift in migration of the cephalic neural crest cells in the modern archosaurs: crocodile *versus* ostrich.**

4. **The youngest specimen of *Archaeopteryx* and new evidence of flight-supporting abilities required by the new Bavarian archaeopterygid.**

5. **Two new pterosaurs: he largest flying reptile of the South America*: Aerotitan sudamericanus* and the youngest Jurassic pterosaur from western Liaoning Province in China: *Orientognathus chaoyngensis*.**

6. **The female of the new Patagonian alvarezsaurid dinosaur *Bonapartenykus ultimus* (the new subfamily: Patagonykinae) with two eggs preserved inside of the body cavity including designation of the new ooparafamily Arriagadoolithidae, and the new oospecies: *Arriagadoolithus patagoniensis*.**

7. **The earliest lizard embryo, preserved in ovo, from Cretaceous of Thailand.**

8. **The new tooth of Peking Man that I found in the old crates from the early 1920´s expedition organized by Johan Gunnar Andersson in China.**

9. **The best 3D preserved embryonic skull of the giant titanosaurian dinosaur.**

10. **Most completely preserved embryos of therizinosauroid and troodontid theropods.**

11. **The new oviraptorid from the southern China: *Huanansaurus ganzhouensis*.**

POPULARIZATION IN RADIO AND TV

TV
2013 – JOJ TV, Slovakia, Katarína Kleknerová
2012 – JOJ TV, Slovakia, Katarína Kleknerová
2011 Aug 12 – Swedish National Television; "Loch Ness reptile" interested scientists, Christian Steen
2011 Jun 15 – European Synchrotron Radiation Facility Communication Group; *Archaeopteryx*, Isalia Petmezakis
2011 May 9 – Swedish National Television; Vetenskaps-Nyheter, Benny Eriksson
2011 Apr 4 – Swedish National Television; Vetenskapens Värld, Benny Eriksson
2011 Mar 30 – Swedish National Television; Vetenskapens Värld, Benny Eriksson
2011 Mar 25 – Swedish National Television; Dinosauriehjärna rekonstrueras, Ulf Lundin
2011 Mar 30 – Swedsih TV4 Nyheterna Uppsala; Per Torsner
2010 Dec – HN TV, Jana Otriová

2001 – HBO TV, The Lost Animals documentary series

Slovak Radio Regina, 2009
Interview by Jana Grajciarová.

Slovak Radio Expres, 2007
Interview by Zuzana Kostelnikova.

Czech Broadcasting Corporation, 2004, 2005

Periskop Serial: Feathered Dinosaurs, Dinosaur Embryos, Dinosaur Giants, Modern Dinosaurology, Polar Dinosaurs I., II., Dinosaur Mummies I., II., Bizarre Dinosaurs I., II., Dinosaur Tracks I., II., Dinosaur Extinction I, II., Tyrannosaurids I., II., Dinosaur Parental Care I., II., Sleeping Dragoon, Feathered Tyrannosauroid, Four-Winged Bird and Enantiornithid Embryo.

Slovak Broadcasting Corporation, 1996
Interview: Paleontological Exploration of Hajnáčka.

HIGHLIGHTED INTERVIEWS

2015
Spink, E. Hunt for links with the moa. *The Dominion Post,* Christchurch, New Zealand.
Lopatníková, M. Humenčan Martin Kundrát sa prebojoval medzi svetovú elitu paleontológov. *Slovenský východ*, Humenné, Slovakia.
Chunxue Yang, Reporter, *Xinhua News Agency of China*.
2014
Ewen Callaway (Senior Reporter). Rival species recast significance of 'first bird'. *Nature.* (see below).
2012
http://www.bbc.co.uk/mundo/noticias/2012/04/120411_argentina_dinosaurio_enigmatico_am.shtml
http://esciencenews.com/articles/2012/04/10/eggs.enigmatic.dinosaur.patagonia.discovered
http://www.dn.se/nyheter/varlden/dinosaurieagg-funna-i-patagonien
http://www.livescience.com/19595-birdlike-dinosaur-eggs.html
http://www.noviny.sk/c/zaujimavosti/kvoli-jednemu-humencanovi-sa-mozno-budu-menit-ucebnice-nasiel-dinosaura
http://www.noviny.sk/c/zaujimavosti/kvoli-jednemu-humencanovi-sa-mozno-budu-menit-ucebnice-nasiel-dinosaura
2011
Waara, A. Goldmine for dinosaur researchers. *New Horizons, Magazine of Uppsala University 1:2,* Uppsala, Sweden.
Letko, Š. V údolí najväčších obrov planéty. *Podvihorlatské noviny,* Humenné, Slovakia.
2010
Letko, Š. Dinosaury sú stále medzi nami. *Podvihorlatské noviny,* Humenné, Slovakia.
2009
Chinoy, D. Walking among dinosaurs. *China Daily,* Beijing, China.
Fajčíková, K. Oklamaná história. *SME,* Bratislava, Slovakia.
2008
Matejíčková, J. Interview. *Quark,* Bratislava, Slovakia.
2004
Pennissi, E. Newly hatched dinosaur babies hit the ground running. *Science* (see below).
Freeman, S. Feathers theory takes flight. *The Republican,* Connecticut, USA.
1999
Matyáš, J. Dinosaur embryos. *Lidové noviny,* Prague, Czech Republic.