

NOVEMBER 2014

## CURRICULUM VITAE

(shortened version)

### Shigehiro Kuraku, Ph.D.

Unit Leader

Phyloinformatics Unit

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## PERSONAL INFORMATION

GENDER	Male
YEAR OF BIRTH	1976
NATIONALITY	Japanese

## ACADEMIC DEGREES

Ph.D.	Department of Biophysics, Graduate School of Science, Kyoto University January 2005 Discipline: Evolutionary Biology Supervisor: Prof. Yoshinori Shichida (after Prof. Takashi Miyata retired)
M.Sc.	Department of Biophysics, Graduate School of Science, Kyoto University March 2001 Discipline: Molecular Evolutionary Biology Supervisor: Prof. Takashi Miyata
B.Sc.	Faculty of Science, Kyoto University March 1999 Discipline: Molecular Evolutionary Biology Supervisor: Prof. Takashi Miyata

## LANGUAGE PROFICIENCY

Japanese (native)

English (fluent)

German (Level 3 – Diplom Deutsch in Japan. 1995)

Italian (Diploma elementare di Lingua Italiana Firenze - Accademia italiana di lingua. 1999)

## ACADEMIC CAREER

Year	Appointment
2014-	Unit Leader Phyloinformatics Unit Center for Life Science Technologies, RIKEN in Kobe, Japan
2014-	Adjunct Associate Professor Organization of Advanced Science and Technology, Kobe University, Japan
2013-	Adjunct Associate Professor Graduate School of Bioscience, Kwasei Gakuin University, Japan
2012-2014	Unit Leader Genome Resource and Analysis Unit, Center for Developmental Biology, RIKEN in Kobe, Japan
2007-2012	Assistant Professor (Akademischer Rat / Wissenschaftlicher Mitarbeiter) Laboratory for Zoology and Evolutionary Biology, Department of Biology, University of Konstanz, Germany
2005-2007	Research Scientist (postdoctoral) Laboratory for Evolutionary Morphology, Center for Developmental Biology, RIKEN in Kobe, Japan
2004-2005	Research Associate (pre-doctoral) Laboratory for Evolutionary Morphology, Center for Developmental Biology, RIKEN in Kobe, Japan
2003-2004	Junior Research Associate Laboratory for Evolutionary Morphology, Center for Developmental Biology, RIKEN in Kobe, Japan

## PUBLICATIONS (Descending order for years of publication; \*I am a corresponding author)

**Original papers** (review papers are numbered separately and listed further below)

**2014**

50. Benoit G Godard, Marion Coolen, Sophie Le Panse, Aurelie Gombault, Susana Ferreiro-Galve, Laurent Laguerre, Ronan Lagadec, Patrick Wincker, Julie Poulain, Corinne Da Silva, Shigehiro Kuraku, Wilfrid Carre, Agnes Boutet, and Sylvie Mazan. Mechanisms of endoderm formation in a cartilaginous fish reveal ancestral and homoplastic traits in jawed vertebrates. *Biology Open*, accepted.

49. Nathalie Feiner, Axel Meyer, Shigehiro Kuraku\*. Evolution of the vertebrate Pax4/6 class of genes with focus on its novel member, the *Pax10* gene. *Genome Biology and Evolution*, 2014. 6: 1635-1651.

**2013**

48. Saori Tani, Shigehiro Kuraku, Hiroshi Sakamoto, Kunio Inoue, and Rie Kusakabe. Developmental expression and evolution of muscle-specific microRNAs conserved in vertebrates. *Evolution & Development*, 2013 15: 293-304.

47. Nathalie Feiner, Yasunori Murakami, Lisa Breithut, Sylvie Mazan, Axel Meyer and Shigehiro Kuraku\*. Saltatory evolution of the *ectodermal neural cortex (ENC)* gene family at the vertebrate origin. **Genome Biology and Evolution**, 2013. doi:10.1093/gbe/evt104.
46. Adina J. Renz, Axel Meyer and Shigehiro Kuraku\*. Revealing less derived nature of cartilaginous fish genomes with their evolutionary time scale inferred with nuclear genes. **PLoS One**, 2013. 8(6): e66400. doi:10.1371/journal.pone.0066400.
45. Zhuo Wang, et al (15th out of the 33 authors). The draft genomes of soft-shell turtle and green sea turtle yield insights into the development and evolution of the turtle-specific body plan. **Nature Genetics**, 2013. 45: 701–706.
44. Shigehiro Kuraku\*, Christian M. Zmasek, Osamu Nishimura, and Kazutaka Katoh. aLeaves facilitates on-demand exploration of metazoan gene family trees on MAFFT sequence alignment server with enhanced interactivity. **Nucleic Acids Research**, 2013. 41 (W1): W22-W28.
43. Nao Niwa, Ai Akimoto, Masashi Sakuma, Shigehiro Kuraku, and Shigeo Hayashi. Homeogenetic inductive mechanism of segmentation in polychaete tail regeneration. **Developmental Biology**, 2013. 381: 460-470.
42. Chris Amemiya, ..... , Shigehiro Kuraku, ..... , Eric S. Lander, Axel Meyer and Kerstin Lindblad-Toh (45th out of the 90 authors). The African coelacanth genome provides insights into tetrapod evolution. **Nature**, 2013. 496: 311–316.
41. Satoko Fujimoto, Yasuhiro Oisi, Shigehiro Kuraku, Kinya G Ota and Shigeru Kuratani. Non-parsimonious evolution of hagfish *Dlx* genes. **BMC Evolutionary Biology**, 2013. 13:15.
40. Jeramiah Smith, Shigehiro Kuraku, ..., and Weiming Li (2nd out of the 59 authors). Sequencing of the sea lamprey (*Petromyzon marinus*) genome provides insights into vertebrate evolution. **Nature Genetics**, 2013. 45: 415-421.
39. Yasuhiro Oisi, Kinya G. Ota, Shigehiro Kuraku, Satoko Fujimoto and Shigeru Kuratani. Craniofacial development of hagfishes and the evolution of vertebrates. **Nature**, 2013. 493:175-180.
38. Bo Xu, Görel Sundström, Shigehiro Kuraku, Ingrid Lundell, and Larhammar Dan. Cloning and pharmacological characterization of the neuropeptide Y receptor Y5 in the sea lamprey, *Petromyzon marinus*. **Peptides**, 2013. 39:64-70.
- 2012**
37. Matsubara K, Kuraku S, Tarui H, Nishimura O, Nishida C, Agata K, Kumazawa Y, and Matsuda Y. Intra-genomic GC heterogeneity in sauropsids: evolutionary insights from cDNA mapping and GC3 profiling in snake. **BMC Genomics**, 2012. 13: 604.
36. Elisabeth Stuermer, Shigehiro Kuraku, Mark Hochstrasser and Stefan G. Kreft. Split-Doa10: a naturally split polytopic eukaryotic membrane protein generated by fission of a nuclear gene. **PLoS One**, 2012. 7(10): e45194.

35. Sabine Freter, Yuko Muta, Paul O'Neill, Vassil Vassilev, Shigehiro Kuraku and Raj Ladher. *Pax2* modulates proliferation during specification of the otic and epibranchial placodes. ***Developmental Dynamics***, 2012. 241:1716-28.
34. Shigehiro Kuraku, Huan Qiu and Axel Meyer. Horizontal transfers of Tc1 elements between teleost fishes and their vertebrate parasites, lampreys. ***Genome Biology and Evolution***. 2012. 4: 929-936.

## 2011

33. Shigehiro Kuraku\* and Shigeru Kuratani. Genome-wide detection of gene extinction in early mammalian evolution. ***Genome Biology and Evolution***, 2011. 3: 1449-1462.
32. Nathalie Feiner, Rolf Ericsson, Axel Meyer, and Shigehiro Kuraku\*. Revisiting the origin of the vertebrate Hox14 by including its relict sarcopterygian members. ***Journal of Experimental Zoology Part B. (Molecular Development and Evolution)***, 2011. 316B: 515-525.
31. Huan Qiu, Falk Hildebrand, Shigehiro Kuraku\*, and Axel Meyer. Unresolved orthology and peculiar coding sequence properties of lamprey genes: the *KCNA* gene family as test case. ***BMC Genomics***, 2011. 12: 325.
30. Tereza Manousaki, Nathalie Feiner, Gerrit Begemann, Axel Meyer, and Shigehiro Kuraku\*. Co-orthology of *Pax4* and *Pax6* to the fly *eyeless* gene: molecular phylogenetic, comparative genomic and embryological analyses. ***Evolution & Development***, 2011. 13: 448-459.
29. Christophe Dessimoz, Stefan Zoller, Tereza Manousaki, Huan Qiu, Axel Meyer, and Shigehiro Kuraku\*. Comparative genomics approach to detecting split coding regions in a low-coverage genome: lessons from the chimaera *Callorhinchus milii* (Holocephali, Chondrichthyes). ***Briefings in Bioinformatics***, 2011. 12: 474-484.
28. Fumiaki Sugahara, Shin-ichi Aota, Shigehiro Kuraku, Yasunori Murakami, Yoko Takio-Ogawa, Shigeki Hirano, and Shigeru Kuratani. Involvement of Hedgehog and FGF signalling in the lamprey telencephalon: evolution of regionalization and dorsoventral patterning of the vertebrate forebrain. ***Development***, 2011, 138: 1217-1226
27. Rie Kusakabe, Shigehiro Kuraku, and Shigeru Kuratani. Expression and interaction of muscle-related genes in the lamprey imply the evolutionary scenario for vertebrate skeletal muscle, in association with the acquisition of the neck and fins. ***Developmental Biology***, 2011, 350: 217-227
26. Adina J Renz, Helen M Gunter, Jan Fischer, Huan Qiu, Axel Meyer, and Shigehiro Kuraku\*. Ancestral and derived attributes of the *dlx* gene repertoire, cluster structure and expression patterns in an African cichlid fish. ***EvoDevo***, 2011, 2: 1

## 2010

25. Shigehiro Kuraku\*, Yoko Takio, Fumiaki Sugahara, Masaki Takechi, and Shigeru Kuratani. Evolution of oropharyngeal patterning mechanisms involving *Dlx* and *endothelins* in

vertebrates. **Developmental Biology**, 2010, 341: 315-323.

24. Nobuhiro Kokubo, Manami Matsuura, Koh Onimaru, Eva Tiecke, Shigehiro Kuraku, Shigeru Kuratani and Mikiko Tanaka. Mechanisms of heart development in the Japanese lamprey, *Lethenteron japonicum*. **Evolution & Development**, 2010, 12: 34-44.
23. Kathryn Elmer, Shaohua Fan, Helen Gunter, Julia Jones, Sven Boekhoff, Shigehiro Kuraku, and Axel Meyer. Rapid evolution and selection inferred from the transcriptomes of sympatric crater lake cichlid fishes. **Molecular Ecology**, 2010, 19 Suppl. 1: 196-210.

## 2009

22. Yukiko Ogino, Hironori Katoh, Shigehiro Kuraku and Gen Yamada. Evolutionary history and functional characterization of androgen receptor genes in jawed vertebrates. **Endocrinology**, 2009, 150: 5415-5427.
21. Nathalie Feiner, Gerrit Begemann, Adina J. Renz, Axel Meyer, and Shigehiro Kuraku\*. The origin of *bmp16*, a novel *Bmp2/4* relative, retained in teleost fish genomes. **BMC Evolutionary Biology**, 2009, 9: 277.
20. Shigehiro Kuraku\*, Axel Meyer and Shigeru Kuratani. Timing of genome duplications: did cyclostomes diverge before, or after? **Molecular Biology and Evolution**, 2009, 26: 47-59.

## 2008

19. Shigehiro Kuraku\*, Yoko Takio, Koji Tamura, Hideaki Aono, Axel Meyer, and Shigeru Kuratani. Non-canonical role of *Hox14* revealed by its expression patterns in lamprey and shark. **Proc Natl Acad Sci, USA**, 2008, 105: 6679-6683.
18. Manami Matsuura, Hidenori Nishihara, Koh Onimaru, Nobuhiro Kokubo, Shigehiro Kuraku, Rie Kusakabe, Norihiro Okada, Shigeru Kuratani, and Mikiko Tanaka. Identification of four Engrailed genes in the Japanese lamprey, *Lethenteron japonicum*. **Developmental Dynamics** 2008, 237: 1581-1589.

## 2007

17. Eva Tiecke, Manami Matsuura, Nobuhiro Kokubo, Shigehiro Kuraku, Rie Kusakabe, Shigeru Kuratani, and Mikiko Tanaka. Identification and developmental expression of two *Tbx1/10*-related genes in the agnathan *Lethenteron japonicum*. **Development, Genes and Evolution** 2007, 217: 691-697.
16. Yoko Takio, Shigehiro Kuraku, Yasunori Murakami, Massimo Pasqualetti, Filippo M. Rijli, Yuichi Narita, Shigeru Kuratani, and Rie Kusakabe. *Hox* gene expression patterns in *Lethenteron japonicum* embryos - insights into the evolution of the vertebrate Hox code. **Developmental Biology** 2007, 308: 606-620.
15. Hiroshi Nagashima, Shigehiro Kuraku, Katsuhisa Uchida, Yoshie Kawashima Ohya, Yuichi Narita, and Shigeru Kuratani. On the carapacial ridge in turtle embryos: its developmental origin, function and the chelonian body plan. **Development** 2007, 134: 2219-2226.
14. Kinya G. Ota, Shigehiro Kuraku, and Shigeru Kuratani. Hagfish embryology with reference to the evolution of the neural crest. **Nature** 2007, 446: 672-675.

**2006**

13. Shigehiro Kuraku\* and Shigeru Kuratani. Timescale for cyclostome evolution inferred with a phylogenetic diagnosis of hagfish and lamprey cDNA sequences. **Zoological Science** 2006, 23: 1053-1064.
12. Masaaki Kajiwara, Shigehiro Kuraku, Takako Kurokawa, Kenichi Kato, Shingo Toda, Hidenori Hirose, Shigeru Takahashi, Yasuyuki Shibata, Taisen Iguchi, Toshie Matsumoto, Takashi Miyata, Takashi Miura, and Yuji Takahashi. Tissue preferential expression of estrogen receptor gene in the marine snail, *Thais clavigera*. **General and Comparative Endocrinology** 2006, 148: 315-326.
11. Yoshie Kawashima Ohya, Ryo Usuda, Shigehiro Kuraku, Hiroshi Nagashima and Shigeru Kuratani. Unique features of *Myf-5* in turtles: nucleotide deletion, alternative splicing, and unusual expression pattern. **Evolution & Development** 2006, 8: 415-423.
10. Shigehiro Kuraku\*, Junko Ishijima, Chizuko Nishida-Umehara, Kiyokazu Agata, Shigeru Kuratani, and Yoichi Matsuda. cDNA-based gene mapping and GC3 profiling in the soft-shelled turtle suggests a chromosomal size-dependent GC bias shared by sauropsids. **Chromosome Research** 2006, 14: 187-202.

**2005**

9. Noriko Funayama, Mikiko Nakatsukasa, Shigehiro Kuraku, Katsuaki Takechi, Mikako Dohi, Naoyuki Iwabe, Takashi Miyata and Kiyokazu Agata. Isolation of *Efsilicatein* and *Eflectin* as molecular markers for sclerocytes and cells involved in innate immunity in the fresh water sponge, *Ephydatia fluviatilis*. **Zoological Science** 2005, 22: 1113-1122.
8. Shigehiro Kuraku, Ryo Usuda, and Shigeru Kuratani. Comprehensive survey of carapacial ridge-specific genes in turtle implies co-option of some regulatory genes in carapace evolution. **Evolution & Development** 2005, 7: 3-17. (This paper constitutes the major part of my Ph.D. thesis)
7. Hiroshi Nagashima, Katsuhisa Uchida, Keiko Yamamoto, Shigehiro Kuraku, Ryo Usuda, and Shigeru Kuratani. Turtle-chicken chimera: an experimental approach to understanding evolutionary innovation in the turtle. **Developmental Dynamics** 2005, 232:149-61.
6. Yoshie Kawashima Ohya, Shigehiro Kuraku and Shigeru Kuratani. Hox code in embryos of Chinese soft-shelled turtle *Pelodiscus sinensis* correlates with the evolutionary innovation in the turtle. **Journal of Experimental Zoology Part B (Mol. Dev. Evol.)**, 2005, 304B: 107-118.

**2004**

5. Yoko Takio, Massimo Pasqualetti, Shigehiro Kuraku, Shigeki Hirano, Filippo M. Rijli, and Shigeru Kuratani Lamprey *Hox* genes and the evolution of jaws. **Nature** 2004, 429; doi:10.1038/nature02616.
4. Kanae Kikugawa, Kazutaka Katoh, Shigehiro Kuraku, Hiroshi Sakurai, Osamu Ishida, Naoyuki Iwabe, and Takashi Miyata. Basal jawed vertebrate phylogeny inferred from multiple nuclear DNA-coded genes. **BMC Biology** 2004, 2:3.

**2003**

3. Katsuhisa Uchida, Yasunori Murakami, [Shigehiro Kuraku](#), Shigeki Hirano and Shigeru Kuratani. Development of the adenohypophysis in the lamprey: evolution of epigenetic patterning programs in organogenesis. *Journal of Experimental Zoology Part B (Mol. Dev. Evol.)* 2003, 300B: 32-47.

**1999**

2. [Shigehiro Kuraku](#), Daisuke Hoshiyama, Kazutaka Katoh, Hiroshi Suga and Takashi Miyata. Monophyly of lampreys and hagfishes supported by nuclear DNA-coded genes. *Journal of Molecular Evolution* 1999, 49:729-35.
1. Hiroshi Suga, Daisuke Hoshiyama, [Shigehiro Kuraku](#), Kazutaka Katoh, Kaoru Kubokawa and Takashi Miyata. Protein tyrosine kinase cDNAs from amphioxus, hagfish, and lamprey: isoform duplications around the divergence of cyclostomes and gnathostomes. *Journal of Molecular Evolution* 1999, 49: 601-8.

**Review papers****2013**

- R12. Masaki Takechi, Noritaka Adachi, Tamami Hirai, Shigeru Kuratani, and [Shigehiro Kuraku](#). The Dlx genes as clues to vertebrate genomics and craniofacial evolution. *Seminars in Cell and Developmental Biology*, 2013. 24:110-118.
- R11. Shigehiro Kuraku. Impact of asymmetric gene repertoire between cyclostomes and gnathostomes. *Seminars in Cell and Developmental Biology*, 2013. 24:119-127.

**2012**

- R10. [Shigehiro Kuraku](#). Genomic novelty at the vertebrate ancestor. 2012. In: *eLS*. John Wiley & Sons Ltd, Chichester. [doi: 10.1002/9780470015902.a0024137]

**2011**

- R9. Hiroshi Nagashima, [Shigehiro Kuraku](#), Katsuhisa Uchida, Yoshie Kawashima-Ohya, Yuichi Narita, Shigeru Kuratani. Body plan of turtles: an anatomical, developmental and evolutionary perspective. *Anatomical Science International*, 2011. 87: 1-13.
- R8. [Shigehiro Kuraku](#). Hox gene clusters of early vertebrates: do they serve as reliable markers for genome evolution? *Genomics, Proteomics & Bioinformatics*, 2011. 9: 97-103.
- R7. Shigeru Kuratani, [Shigehiro Kuraku](#) and Hiroshi Nagashima. Evolutionary developmental perspective for the origin of the turtles: the folding theory for the shell based on the developmental nature of the carapacial ridge. *Evolution & Development*, 2011. 13: 1-14.

**2010**

- R6. [Shigehiro Kuraku](#)\*. Palaeophylogenomics of the vertebrate ancestor—impact of hidden paralogy in hagfish and lamprey gene phylogeny. *Integrative and Comparative Biology*, 2010. 50: 124-129.



**2009**

- R5. Shigehiro Kuraku and Axel Meyer. The evolution and maintenance of *Hox* gene clusters in vertebrates and the teleost-specific genome duplication. ***International Journal of Developmental Biology***, 2009. 53: 765-773.
- R4. Shigehiro Kuraku. Molecular evolutionary studies on Chondrichthyes: in search of the ancestral vertebrate genome. ***Annual Report of Japanese Society of Elasmobranch Studies***, 2009. 45: 17-27 (only abstract in English).

**2008**

- R3. Shigehiro Kuraku and Axel Meyer. Genomic analysis of cichlid fish 'natural mutants'. ***Current Opinion in Genetics & Development***, 2008. 18: 551-558.
- R2. Shigehiro Kuraku\* Insights into cyclostome phylogenomics: pre-2R or post-2R? ***Zoological Science***, 2008. 25: 960-968.

**2002**

- R1. Shigeru Kuratani, Shigehiro Kuraku, and Yasunori Murakami. Lamprey as an evo-devo model: lessons from comparative embryology and molecular phylogenetics. ***Genesis***, 2002. 34: 175-183.

**Book Chapters**

Hiroshi Nagashima, Shigehiro Kuraku, Katsuhisa Uchida, Yoshie Kawashima-Ohya, Yuichi Narita, and Shigeru Kuratani. Origin of the turtle body plan - The folding theory to illustrate turtle-specific developmental repatterning. In D. Brinkman (Ed.), Eugene S. Gaffney Festschrift volume. Dordrecht, Springer. 2012.

Shigehiro Kuraku and Axel Meyer. "Detection and phylogenetic assessment of conserved synteny derived from whole genome duplications" in Volume 'Evolutionary Genomics: statistical and computational methods' in Series 'Methods in Molecular Biology'. Maria Anisimova, Ed. Springer. 2012.

Shigehiro Kuraku and Axel Meyer. "Whole Genome Duplications and the Radiation of Vertebrates" in Evolution after Gene Duplication. Pp. 299 - 311. Katharina Dittmar and David Liberles, Eds. Wiley-Blackwell, NY. 2010.

Shigehiro Kuraku\*, Kinya G. Ota, Shigeru Kuratani. "Jawless Fishes (Cyclostomata)" in The Timetree of Life. S. Blair Hedges and Sudhir Kumar, Eds. Pp315-319. Oxford University Press. 2009.

Shigehiro Kuraku\*, Yoko Takio, Shigeru Kuratani. Hox genes and emerging body plans. "Frontiers of development, differentiation, and regeneration 2005" Experimental Medicine Vol. 23-No.1 (Japanese only)



**Translation into Japanese**

Chapter 9 of "Evolution" by Nicholas H. Barton et al. (2009). Edited by Takashi Miyata. MEDSI International.

## PRESENTATIONS IN INTERNATIONAL MEETINGS (given in English)

Oral Presentations
<p><u>Shigehiro Kuraku</u> (Invited). Revealing cryptic pan-vertebrate gene repertoire in developmental phylome The fifth meeting of the European Society for Evolutionary Developmental Biology, in Vienna, Austria, July 22-25, 2014.</p>
<p><u>Shigehiro Kuraku</u> (Invited) Phylogenetics in Evo-Devo: genomic dissection of vertebrate novelty and diversity Commemorable Symposium for International Prize for Biology 2013 'Influences and Impacts of Evolutionary Biology'. Fukuoka, Japan. November 21-22, 2013.</p>
<p><u>Shigehiro Kuraku</u> (Invited) Diverse Vertebrate Genomic Architecture Elucidated by Wide Taxon Sampling and Modern Sequencing Technologies The 24<sup>th</sup> CDB Meeting 'Genomics and Epigenomics with Deep Sequencing' at RIKEN CDB in Kobe, Japan. June 13-14, 2013.</p>
<p><u>Shigehiro Kuraku</u> (Invited) Evolving regulatory gene repertoire Commemorable Symposium for International Prize for Biology 2011 'Genomic Regulation of Development' in Kyoto, Japan. November 30-December 1, 2011.</p>
<p><u>Shigehiro Kuraku</u> (Invited) Navigating evolution-aware life science: our ancestral genome, 500 million years ago Young Researchers Conference on Evolutionary Genomics in Tokyo, Japan. August 1-2, 2011.</p>
<p>Tereza Manousaki, Axel Meyer, <u>Shigehiro Kuraku</u> Reasons why dating the two-round whole genome duplications is so difficult Society for Molecular Biology and Evolution (SMBE) in Kyoto, Japan. July 26-28, 2011.</p>
<p><u>Shigehiro Kuraku</u> (Invited) Unveiling hidden paralogy in cyclostome developmental programs Evo-Devo: where are we and where do we go? Symposium organized by Fondation des Treilles. Tourtour, France. April 26-29, 2011.</p>
<p><u>Shigehiro Kuraku</u> (Invited) Unsolved problems about whole genome duplications in early vertebrate evolution Leopoldina Symposium 'Modern approaches to ecology and evolution: Genomics of speciation, species differences and adaptations'. Hegne, Germany. August 3-5, 2010</p>
<p>Tereza Manousaki, Huan Qiu, Falk Hildebrand, Axel Meyer, and <u>Shigehiro Kuraku</u>* What are cyclostomes, genomically speaking? The 3rd meeting of European Society for Evolutionary Developmental Biology. Paris, France. July 6–9, 2010</p>
<p><u>Shigehiro Kuraku</u> (Invited) 'Post-2R' cyclostomes: molecular phylogenetic view of the vertebrate ancestor Annual meeting of the Society of Integrative and Comparative Biology (SICB). Seattle, USA. Jan. 3-7, 2010</p>

<p><u>Shigehiro Kuraku</u> (Invited) Vertebrate phylome: bioinformatics or informatic biology? The 4th Global COE International Symposium joint with the 19th Hot Spring Harbor Symposium of Medical Institute of Bioregulation “Molecular Evolution and Bioinformatics”. Kyushu Univ. Fukuoka, Japan. Nov 1-2, 2009</p>
<p><u>Shigehiro Kuraku</u> Phylogenomic Evo-Devo: orthology/paralogy revisited The 2nd meeting of European Society for Evolutionary Developmental Biology. Ghent, Belgium. July 29 - August 1, 2008</p>
<p><u>Shigehiro Kuraku</u> (Invited) Cyclostome Phylogenomics The 15th CDB Meeting - Advances in Cyclostome Research: Body plan and developmental programs before the jawed vertebrates. RIKEN CDB, Kobe, Japan. Jan. 24-25, 2008</p>
<p><u>Shigehiro Kuraku</u>, Kinya, Ota, Rie Kusakabe, and Shigeru Kuratani Pre-2R or post-2R?: phylogeny and expression patterns of <i>Dlx</i> genes in cyclostomes. The first and founding meeting of European Society for Evolutionary Developmental Biology. Prague, Czech Republic. Aug. 16-19, 2006</p>
<p><u>Shigehiro Kuraku</u> and Shigeru Kuratani Detecting gene losses: a search for developmental genes missing only in mammals. Genomes, Evolution &amp; Bioinformatics 2006 (Society of molecular biology and evolution) Arizona State University, USA. 2006. May 24-28, 2006</p>
<p><u>Shigehiro Kuraku</u>, Ryo Usuda, Hiroshi Nagashima and Shigeru Kuratani Identification of carapacial ridge-specific gene expressions and gene co-option in turtle evolution International Society for Developmental Biologists (ISDB) Congress, Sydney, Australia. Sep. 3-7, 2005</p>
<p><u>Shigehiro Kuraku</u>, Ryo Usuda, Shigeru Kuratani Identification of gene co-option involved in turtle shell evolution. Genome &amp; Evolution 2004 (Annual Meeting for Society of Molecular Biology and Evolution), Pennsylvania State Univ., USA. Jun. 17-20, 2004</p>
<p><b>Poster Presentations</b> (Only those presented by myself)</p>
<p><u>Shigehiro Kuraku</u>, Osamu Nishimura and Kazutaka Katoh aLeaves: a Web Server to Help Explore Protein-coding Landscape Across Diverse Animal Genomes CDB Symposium 2013 ‘The Making of a Vertebrate’ at RIKEN CDB in Kobe, Japan. March 4-6, 2013.</p>
<p>Nathalie Feiner, Axel Meyer, <u>Shigehiro Kuraku</u> Non-conservation of developmental ‘toolkit’ genes Society for Molecular Biology and Evolution (SMBE) in Kyoto, Japan. July 26-28, 2011.</p>
<p><u>Shigehiro Kuraku</u> Half a billion years of human genome evolution illuminated by non-human genomes EMBO Meeting 2010, Barcelona, Spain. September 4-7, 2010</p>

<p>Tereza Manousaki, Huan Qiu, Falk Hildebrand, Axel Meyer and <u>Shigehiro Kuraku</u>*  Molecular evolution in early vertebrate genomes  Society of Molecular Biology and Evolution (SMBE) annual meeting, Lyon, France. July 4-8, 2010</p>
<p><u>Shigehiro Kuraku</u>  Phylogenetics of developmental genes in vertebrates: formulae and exceptions  German Society of Developmental Biology (GfE) meeting, Hannover, Germany. March 25-28, 2009</p>
<p><u>Shigehiro Kuraku</u>  Timing of two-round (2R) genome duplications in early vertebrates  Society of Molecular Biology and Evolution (SMBE) annual meeting, Barcelona, Spain. June 5-8, 2008</p>
<p><u>Shigehiro Kuraku</u>  Potential reasons why molecular phylogenies of cyclostome genes are not clear-cut  The 15th CDB Meeting - Advances in Cyclostome Research: Body plan and developmental programs before the jawed vertebrates. RIKEN CDB, Kobe, Japan. Jan. 24-25, 2008</p>
<p><u>Shigehiro Kuraku</u> and Shigeru Kuratani  Evolution of gene repertoire: Formulae and exceptions  4th CDB Symposium, Kobe, Japan. April 11, 2006</p>
<p><u>Shigehiro Kuraku</u>, Junko Ishijima, Shigeru Kuratani and Yoichi Matsuda  Chromosome size-dependent GC-compartmentalization in sauropsids estimated by cDNA sequencing and gene mapping in Chinese soft-shelled turtle <i>Pelodiscus sinensis</i>  Society of Molecular Biology and Evolution (SMBE), Aotea Center, Auckland, New Zealand. Jun. 18-23, 2005</p>
<p><u>Shigehiro Kuraku</u>, Shigeru Kuratani.  Detection of developmental constraint and its breakage at the molecular level  3rd CDB Symposium, Kobe, Japan. April 11, 2005</p>
<p><u>Shigehiro Kuraku</u>, Ryo Usuda, Shigeru Kuratani  An evolutionary developmental attempt to elucidate how turtle acquired the shell  5th International Workshop on Advanced Genomics, Yokohama, Japan. Jun. 26-7, 2003</p>
<p><u>Shigehiro Kuraku</u>, Ryo Usuda, Shigeru Kuratani  Searching for molecular mechanisms that evolved turtle shell  1st CDB Symposium, Kobe, Japan. Mar. 23, 2003</p>
<p><u>Shigehiro Kuraku</u>, Kazutaka Katoh, Takashi Miyata  Evolution of the nuclear receptor family by gene duplication  Symposium on Evolutionary Genomics, Atami, Japan. Nov. 4, 2001</p>

## PRESENTATIONS IN DOMESTIC MEETINGS (Summary)

More detailed information is available upon request

<b>Invited Oral Presentations</b>
Annual meeting of Society of Chromosome Research of Japan in 2006 Annual meeting of Zoological Society of Japan in 2004 and 2013 Annual meeting of the Japan Society for Comparative Endocrinology in 2013 Annual meetings of Japanese Society of Developmental Biologists in 2012 and 2013 Annual meeting of Molecular Biology Society of Japan in 2003
<b>Contributed Oral Presentations</b>
Annual meetings of Genetics Society of Japan in 1998, 1999, 2000, 2001 and 2005 Annual meetings of Japanese Society of Developmental Biologists in 2003 and 2006 Annual meeting of Zoological Society of Japan in 2013 Annual meeting of Society of Evolutionary Studies Japan in 2001 Biennial meeting of Japanese Society of Elasmobranch Studies in 2012
<b>Contributed Poster Presentations</b>
Annual meetings of Society of Evolutionary Studies Japan in 2000, 2003 and 2014 Annual meetings of Molecular Biology Society of Japan in 1999, 2000, 2002, 2005 and 2013 Annual meeting of Zoological Society of Japan in 2005

## INVITED SEMINARS (given in English)

- Invited seminar at Hamada Lab in Graduate School of Frontier Biosciences of Osaka Univ. 'Loss of developmental regulatory genes in mammalian evolution: molecular phylogenetics for developmental biology', April 2014.
- Invited seminar at National Institute for Basic Biology 'Vertebrate phylome for 'next-generation' comparative zoology' in Okazaki, Feb 2014.
- Invited Marine Genomics Seminar at Okinawa Institute of Science and Technology, Japan. 'Challenges in analyzing emerging non-model vertebrates.' June 12, 2012.
- Department seminar at Department of Zoology and Biodiversity, Charles University, Prague, Czech Republic. 'Vertebrate palaeogenomics - our genome and fish genome'. March 21, 2011
- Invited seminar at Zurich Colloquium for Computational Molecular Evolution in ETH Zurich, titled 'Early vertebrate phylome as a basis to understand evolution of model vertebrate genomes'. June 14, 2010
- Invited seminar at Swiss Federal Institute of Aquatic Science and Technology (EAWAG) in Switzerland, titled 'Our inner fish genome: what were gained and lost during the 500-million-year evolution?'. March 22, 2010
- Invited seminar at Biological Station Roscoff, in France, titled 'Vertebrate phylome: connecting taxonomy, evolutionary genomics and developmental biology'. February 18, 2010
- Department Seminar at Department of Biology, University of Konstanz, Germany. 'Evolution of gene repertoires and animal body plans: lessons from turtles and cyclostomes'. November 22, 2007

## APPOINTMENTS / BOARD PARTICIPATION

<b>Contribution to editorial services for academic journals</b>
<ul style="list-style-type: none"><li>- Member of F1000Prime (former Faculty1000) (since April 2013)</li><li>- Associate Editor for the journal BMC Evolutionary Biology (since April 2014)</li><li>- Many <i>ad hoc</i> contributions as reviewers for academic journals</li></ul>
<b>Contribution to graduate programs</b>
<ul style="list-style-type: none"><li>- Principal investigator at the graduate school, International Max-Planck Research School (IMPRS) Organismal Biology (2010-2012)</li><li>- Principal investigator at the graduate school, Konstanz Research School Chemical Biology (KoRS-CB) (2009-2012)</li></ul>
<b>Contribution to academic societies</b>
<ul style="list-style-type: none"><li>- Editorial staff of the Society of Evolutionary Studies, Japan (since 2010)</li></ul>

## PEDAGOGIC RECORDS

### Teaching experience

Jun. 2001 – Jan. 2002	Position: Teaching Assistant (during doctoral study) Department of Biophysics, Graduate School of Science, Kyoto University Practical course: Phylogenetics Computing Course
Apr. 2007 – Feb. 2012	Position: Assistant Professor Department of Biology, University of Konstanz  <b>Regular lectures/courses</b> [hours per year] - Vertiefungskurs 2007-2011 ‘Molecular Evolutionary Biology’ (Practical experiment course) [70] - Lecture ‘Evolutionary Biology’ 2007/08- <a href="#">2011/12</a> [10] - Anatomy course ‘Animal Body Plan’ 2007/08- <a href="#">2011/12</a> [20] - Course ‘Computational Life Science’ 2008/09 and 2011/12 [6] (for PhD students in Graduate School <a href="#">KoRS-CB</a> ) - Lecture ‘Evolutionary Organismal Biology’ 2010 [2] - <a href="#">IMPRS</a> (International Max Planck Research School) Organismal Biology Course ‘Molecular Evolution’ – 2010/11 [2]  <b>Direct supervision of students</b> 3 PhD students, 3 diploma students, 1 master student, 6 pre-diploma technical assistants, 3 bachelor students  <b>Invited lecture</b> - ‘Vertebrate Morphology’ Course ( <a href="#">BIO262</a> ) at University of Zurich Title: Vertebrate evolutionary genomics: a reference for morphological studies. February 29, 2008 - Reviews in Computational Biology ( <a href="#">263-5151-00L</a> ) at ETH Zurich. Title: Gene prediction in animal genomes. May 16, 2011
Sep. 2013 -	Position: Adjunct Associate Professor Department of Bioscience, Kwansei Gakuin University  <b>Regular course</b> [hours per year] - Molecular Evolution and Genome Informatics in 2013 and 2014 [20]  <b>Direct supervision of students</b> 1 undergraduate student (2014-)
Jul. 2014 -	Position: Adjunct Associate Professor Organization for Advanced Science and Technology, Kobe University  <b>Lecture</b> - Advanced Integrative Science Lecture Series [1.5] (Sep. 2, 2014)



## **Activities for career development and education**

### **Presentations (in Japanese)**

「ドイツで見た桜 - キャリアを創っていくということ」 at the annual meeting of the Japanese Society of Developmental Biologists. May 29, 2012.

「そこでしか得られないもの—ゲノムと世界を見渡して」 at the IGER program meeting of Nagoya University held at RIKEN CDB in January 2014.

### **Participation in pedagogic workshops**

'Introduction to the German Higher Education System and Sources of Financial Support'  
Organized by Academic Staff Development Office, University of Konstanz. October 21, 2010.

'Planning a scientific career for postdocs'

Lecturer: Dr. Beate Scholz

Organized by Academic Staff Development Office, University of Konstanz. December 8, 2010.