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CURRICULUM VITAE

NATIONAL LABORATORY RESEARCH SCIENTIST

2001-current
Joint Genome Institute & Lawrence Berkeley National Laboratory

POSTDOCTORAL

1999-2001. Asian Biogeography funded by the National Science Foundation.
Washington University, St. Louis, MO

EDUCATION

1992-1999, Ph.D., Washington University, St. Louis, MO, Degree August, 1999.

Molecular Phylogenetic Studies of Historical Biogeography in the Asian Herpetofauna and Evolution of the Vertebrate Mitochondrial Genome—Advisor Allan Larson

1988, B.A. Biology, University of California at Santa Cruz

RESEARCH EXPERIENCE

1992-1999. Thesis research on two topics: Asian biogeography and evolution of the vertebrate mitochondrial genome.

I. Biogeography of Asian amphibians and reptiles using phylogenies based on mitochondrial DNA sequence data in conjunction with allozyme data (see below, 1989-

1992). Three levels of investigation are examined: (1) intercontinental comparisons to assess the biogeographic impact of Gondwanan subcontinental collisions on the fauna of the northern hemisphere, and the role of the Bering Strait in contributing Asian faunal elements to North America. (2) biogeography of desert regions in Asia, and (3) investigation of the fauna in Tibet using both arid and mesic faunas of Asia. Currently phylogenetic hypotheses have been generated for lizard groups—Acrodonta, Laudakia, Phrynocephalus, Cyrtodactylus, Teratoscincus, Asian & North American Scincidae, Eurasian & North American Anguimorpha; frog groups—Asian Bufo, Asian & North American Ranidae; and Salamanders—Hynobiidae and Salamandidae. Nine papers are published on this subject (see bibliography).

II. Evolution and phylogenetic utility of major structural features of the vertebrate mitochondrial genome. Structural features of the mitochondrial genome are analyzed phylogenetically to assess their phylogenetic utility. Mechanistic hypotheses for the evolution of major structural features of the mitochondrial genome are generated based on statistical and phylogenetic analyses. Six papers are published on this subject (see bibliography).

1989-1992. Molecular phylogenetic inference of arid Asian reptiles using allozyme electrophoresis at U.C. Berkeley, two papers are published based on these data (see bibliography).

1982-1988. Biogeographic research on the amphibians and reptiles of the Inyo and White mountains region of eastern California and western Nevada in preparation for two book chapters. One paper and two book chapters are published on this subject. (see bibliography).

FIELD EXPERIENCE

2000. Turkey (one and a half months)—In collaboration with Ismiel Ugurtas of Uludag University, Bursa, Turkey.

1999. Iran (one month)—In collaboration with Soheila Shasii of the Shahid Bahonar University, Kerman, Iran.

1995. Turkmenistan and Kazakhstan (one month)—In collaboration with Ilya Darevsky and the Zoological Institute, St. Petersburg.

1993. Tibet (two months)—In collaboration with Ermi Zhao and the Chengdu Institute of Biology.

1992. Mongolia (one week)—In collaboration with Kh. Monkbayar and the Mongolian State Pedagogical University, Ullan Baatar.

Sichuan, and eastern China (two months)—In collaboration with Ermi Zhao and the Chengdu Institute of Biology.

Turkmenistan (one and a half months)—In collaboration with Ilya Darevsky and the Zoological Institute, St. Petersburg.

1990. Tibet (two months)—in collaboration with Ermi Zhao and the Chengdu Institute of Biology.

Russian deserts (one and a half months)—(on the western side of the Caspian Sea) In collaboration with Ilya Darevsky and the Zoological Institute, St. Petersburg.

1989. Turkmenistan, Georgia and Russia (one and a half months)—In collaboration with Ilya Darevsky and the Zoological Institute, St. Petersburg.

1988. Northwestern China and Tibet (two months)—In collaboration with Ermi Zhao and the Chengdu Institute of Biology.

1987. Northwestern China and northern Tibet (two months)—In collaboration with Ermi Zhao and the Chengdu Institute of Biology.

Thailand (one week).

French Polynesia (two weeks).

1986. Sichuan and northwestern China (one and a half months)—In collaboration with Ermi Zhao and the Chengdu Institute of Biology.

In addition, I have had field experience in Mexico (five times), Guatemala, West Indies (two times), Peru, Arizona, California, Colorado, Florida, Missouri, Nevada, New Mexico, North Carolina, Oklahoma, Texas, and Utah.

CURATORIAL EXPERIENCE

1984-Summer. Curatorial Assistant in Charge of Herpetology Laboratory. Museum of Vertebrate Zoology, University of California at Berkeley.

1983-Summer. Curatorial Assistant in Herpetology. Museum of Vertebrate Zoology, University of California at Berkeley.

1985-Summer. Curatorial Assistant in Herpetology. Museum of Vertebrate Zoology, University of California at Berkeley.

TEACHING EXPERIENCE

1993. Graduate Teaching Assistant, Washington University, St. Louis, MO
Comparative Vertebrate Physiology

1987. Teaching Assistant, University of California at Santa Cruz
Herpetology

1985. Teaching Assistant, University of California at Santa Cruz
Herpetology

HONORS AND AWARDS

2001-declined. Parsons Postdoctoral Fellow, Natural History Museum of Los Angeles

1993-1996. National Science Foundation Predoctoral Fellowship.

1988. Honors in the Undergraduate Thesis. University of California at Santa Cruz

1987. Chancellor's Award, University of California at Santa Cruz
for research on the California and Nevada deserts.

1983. Best Poster Presentation in Herpetology
Herpetologist's League, Salt Lake City, Utah

GRANTS

2001-current. Impact of the Arabian Collision on the Iranian Plateau Herpetofauna
Awarded to J. Robert Macey
National Geographic Society
Total Award $19,775

1998-2001. Historical Inference of Biogeography Through Phylogenetic Reconstruction of Arid Asian Faunal Elements
Awarded to Allan Larson, J. Robert Macey, and Theodore J. Papenfuss
National Science Foundation

Total Award $200,000.

1992. The Biogeography of the Arid Asian Herpetofauna: An Evolutionary Model
Awarded to Theodore J. Papenfuss, and J. Robert Macey
Grant for Research and Exploration
National Geographic Society
Total Award $30,000

1989. The Effects of the Himalayan Uplift on Arid Herpetofaunal Biogeography
Awarded to Theodore J. Papenfuss, and J. Robert Macey
Grant for Research and Exploration
National Geographic Society
Total Award $20,000

1987. Exploration of the Chinese Amphibian and Reptile Fauna
Principal Investigator, for Graduate Research, (while an undergraduate)
Explorers Club
Total Award $1,000

1987. Exploration of the Chinese Amphibian and Reptile Fauna
President's Undergraduate Fellowship
University of California at Santa Cruz
Total Award $400

1984. Herpetological Studies of the Inyo and White Mountains Region of Eastern California and Western Nevada
Environmental Field Program, University of California at Santa Cruz
Total Award $1,000

PROFESSIONAL SERVICE

Associate editor, Asiatic Herpetological Research (1988-current).

Reviewed for: Biological Journal of the Linnean Society (two times), Comparative Biochemistry and Physiology, Herpetologica (four times), Herpetological Monographs(two times), Journal of Herpetology (three times), Molecular Phylogenetics and Evolution (three times), and Systematic Biology (two times).

BOOK REVIEWS

Macey, J. R. 2000. Review of "Describing Species: Practical Taxonomic Procedure for Biologists" by Judith E. Winston (1999), Columbia Univ. Press, New York, 518 pp. The Quarterly Review of Biology 75:443.

BIBLIOGRAPHY

Papenfuss, T. J., J. R. Macey, and J. A. Schulte. 2001. A New Lizard Species in the Genus *Xantusia* from Arizona. Scientific Papers, Natural History Museum, The University of Kansas (in press).

Schulte II, J. A., J. R. Macey, R. Pethiyagoda, and A. Larson. 2001. Rostral Horn Evolution Among Agamid Lizards of the Genus *Ceratophora* Endemic to Sri Lanka. Molecular Phylogenetics and Evolution (in press).

Macey, J. R., J. L. Strasburg, J. A. Brisson, V. T. Vredenburg, M. Jennings, and A. Larson. 2001. Molecular phylogenetics of Western North American frogs of the Rana boylii species group. Molecular Phylogenetics and Evolution 19:131-143.

Weisrock, D. W., J. R. Macey, I. H. Ugurtas, A. Larson, and T. J. Papenfuss. 2001. Molecular phylogenetics and historical biogeography among salamandrids of the "true" salamander clade: Rapid branching of numerous highly divergent lineages with the rise of Anatolia in Mertensiella luschani. Molecular Phylogenetics and Evolution 18:434-448.

Macey, J. R., N. B. Ananjeva, Y. Wang, and T. J. Papenfuss. 2000. Phylogenetic relationships among Asian gekkonid lizards formerly of the genus Cyrtodactylus based on cladistic analyses of allozymic data: Monophyly of Cyrtopodion and Mediodactylus. Journal of Herpetology 34:258-265.

Macey, J. R., J. A. Schulte II, H. G. Kami, N. B. Ananjeva, A. Larson, and T. J. Papenfuss. 2000. Testing alternative hypotheses of vicariance in the agamid lizard Laudakia caucasia in mountain ranges on the northern Iranian Plateau. Molecular Phylogenetics and Evolution 14:479-483.

Macey, J. R., J. A. Schulte II, A. Larson. 2000. Evolution and phylogenetic information content of mitochondrial genomic structural features illustrated with acrodont lizards. Systematic Biology 49:257-277.

Macey, J. R., J. A. Schulte II, A. Larson, N. B. Ananjeva, Y. Wang, R. Pethiyagoda, N. Rastegar-Pouyani, and T. J. Papenfuss. 2000. Evaluating trans-Tethys migration: An example using acrodont lizard phylogenetics. Systematic Biology 49:233-256.

Schulte II, J. A., J. R. Macey, R. E. Espinoza, and A. Larson. 2000. Phylogenetic relationships in the iguanid lizard genus Liolaemus: Multiple origins of viviparous reproduction and evidence for recurring Andean vicariance. Biological Journal of the Linnean Society 69:75-102.

Macey, J. R., J. A. Schulte II, A. Larson, B. S. Tuniyev, N. Orlov, and T. J. Papenfuss. 1999. Molecular phylogenetics, tRNA evolution and historical biogeography in anguid lizards and related taxonomic families. Molecular Phylogenetics and Evolution 12:250-272.

Macey, J. R., Y. Wang, N. B. Ananjeva, A. Larson, and T. J. Papenfuss. 1999. Vicariant patterns of fragmentation among gekkonid lizards of the genus Teratoscincus produced by the Indian Collision: A molecular phylogenetic perspective and an area cladogram for Central Asia. Molecular Phylogenetics and Evolution 12:320-332.

Macey, J. R., J. A. Schulte II, N. B. Ananjeva, A. Larson, N. Rastegar-Pouyani, S. M. Shammakov, and T. J. Papenfuss. 1998. Phylogenetic relationships among agamid lizards of the Laudakia caucasia species group: Testing hypotheses of biogeographic fragmentation and an area cladogram for the Iranian Plateau. Molecular Phylogenetics and Evolution 10:118-131.

Macey, J. R., J. A. Schulte II, A. Larson, Z. Fang, Y. Wang, B. S. Tuniyev, and T. J. Papenfuss. 1998. Phylogenetic relationships of toads in the Bufo bufo species group from the eastern escarpment of the Tibetan Plateau: A case of vicariance and dispersal. Molecular Phylogenetics and Evolution 9:80-87.

Macey, J. R., J. A. Schulte II, A. Larson, and T. J. Papenfuss. 1998. Tandem duplication via light-strand synthesis may provide a precursor for mitochondrial genomic rearrangement. Molecular Biology and Evolution 15:71-75.

Schulte II, J. A., J. R. Macey, A. Larson, and T. J. Papenfuss. 1998. Molecular tests of phylogenetic taxonomies: A general procedure and example using four subfamilies of the lizard family Iguanidae. Molecular Phylogenetics and Evolution 10:367-376.

Macey, J. R., N. B. Ananjeva, Y. Wang, and T. J. Papenfuss. 1997. A taxonomic reevaluation of the gekkonid lizard genus Teratoscincus in China. Russian Journal of Herpetology 4:8-16.

Macey, J. R., A. Larson, N. B. Ananjeva, Z. Fang, and T. J. Papenfuss. 1997. Two novel gene orders and the role of light-strand replication in rearrangement of the vertebrate mitochondrial genome. Molecular Biology and Evolution 14:91-104.

Macey, J. R., A. Larson, N. B. Ananjeva, and T. J. Papenfuss. 1997. Evolutionary shifts in three major structural features of the mitochondrial genome among Iguanian lizards. Journal of Molecular Evolution 44:660-674.

Macey, J. R., A. Larson, N. B. Ananjeva, and T. J. Papenfuss. 1997. Replication slippage may cause parallel evolution in the secondary structures of mitochondrial transfer RNAs. Molecular Biology and Evolution 14:30-39.

Macey, J. R., and A. Verma. 1997. Homology in phylogenetic analysis: Alignment of transfer RNA genes and the phylogenetic position of snakes. Molecular Phylogenetics and Evolution 4:272-279.

Macey, J. R., and T. J. Papenfuss. 1991. The amphibians of the White-Inyo Range. Pp. 277-290. In C. A. Hall, jr. (ed.), Natural History of the White-Inyo Range, Eastern California. University of California Press, Berkeley.

Macey, J. R., and T. J. Papenfuss. 1991. The reptiles of the White-Inyo Range, Pp. 291-360. In C. A. Hall, jr. (ed.), Natural History of the White-Inyo Range, Eastern California. University of California Press, Berkeley.

Ananjeva, N. B., G. Peters, J. R. Macey, and T. J. Papenfuss. 1990. Stellio sacra (Smith 1935) - a distinct species of Asiatic Rock Agamid from Tibet. Asiatic Herpetological Research 4:104-115.

Losos, J. B., T. J. Papenfuss, and J. R. Macey. 1989. Correlates of sprinting, jumping, and parachuting performance in the Butterfly Lizard, Leiolepis belliani. Journal of Zoology, London 217:559-568.

Macey, J. R., T. J. Papenfuss, and E. Zhao. 1988. The snakes of Ningxia Hui Autonomous Region as an indication of a herpetofaunal corridor. Chinese Herpetological Research 2:4-5.

Zhao, E., J. R. Macey, and T. J. Papenfuss. 1988. A new species of Rana from Ningxia Hui Autonomous Region. Chinese Herpetological Research 2:1-3.

Macey, J. R. 1986. The biogeography of a herpetofaunal transition between the Great Basin and Mojave deserts. Pp. 119-128 In C. A. Hall, jr. and D. J. Young (eds.), Natural History of the White-Inyo Range, eastern California and western Nevada and high altitude physiology: University of California White Mountain Research Station Symposium, August 23-25, 1985, Bishop, California. Volume 1:i-240.

Macey, R. J. 1983. Charina bottae bottae (Pacific Rubber Boa) food. Life History Notes. Herpetological Review 14:19.

NATURAL HISTORY PHOTOGRAPHY

Macey, J. R. 1999. 12 photos, In S. C. Anderson. The Lizards of Iran. Contr. to Herptol. 15, Soc. Study of Amph. and Rept., Oxford, Ohio.

Macey, J. R. 1996. 1 photo, In N. N. Szczerbak and M. L. Golubev. Gecko fauna of the USSR and contiguous regions. Contr. to Herptol. 13, Soc. Study of Amph. and Rept., Oxford, Ohio.

Macey, J. R. 1993. 71 photos, In E. Zhao and K. Adler. Herpetology of China. Contr. to Herptol. 10, Soc. Study of Amph. and Rept., Oxford, Ohio.