#### **CURRICULUM VITAE**

#### Michael A Huffman

Google Scholar Citations (last updated 2022.3.1)

	All	Since 2017
Citations	10070	3516
h-index	56	31
i10-index	157	111



#### Personal:

Born 1958, Denver, Colorado

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### **Current Status:**

Associate Professor (2022.4.1~) Wildlife Research Center (Inuyama Campus), Kyoto University.

Associate Membership to the School of Graduate Studies, University of Lethbridge, Lethbridge, Canada (April 2017~)

Adjunct Professor, Universita degli Studi di Scienze Gastronomiche, Masters Course of Gastronomy "Food Ecologies and Sovereignty", Pollenzo, Italy (2017~ current)

Scientific advisory board member, Austrian Research Center for Primatology, Ossiach, Austria (2016~ current)

PhD Co-Supervisor, Keble College, Oxford University, Oxford, UK. (2021, March~ current).

#### **Previous affiliations:**

Associate Professor (2001.9.16 – 2022.3.31), Section of Social Systems Evolution, PRI, Kyoto University

Director (2021.4.1 – 2022.3.31), Center for International Collaboration and Advanced Studies in Primatology (CICASP), PRI, Kyoto University (2021.4.1~2023.3).

Adjunct Faculty, National Institute of Advanced Studies, Indian Institute of Science Campus, Bangalore India (from September 2011~2012)

Director, Japanese Macaque Field Research Centre, Primate Research Institute, Kyoto University (2005.4~2007.3)

Visiting Lecturer, University of Toyama, School of Humanities (2002.10.09~2003.3.31).

Visiting Lecturer, Hamamatsu University School of Medicine (2000.4.1~2003.3.31).

Adjunct Professor, Section of Behavioral Development, Center for Human Evolution Modeling Research, Primate Research Institute, Kyoto University (1999.5 ~ 2001.8).

Visiting Lecturer, Hiroshima City University, Ecological Anthropology & Primatology (1996.9 ~ 1999.6)

Adjunct Research Associate Professor, University of Colorado-Denver, Department of Anthropology (1993.3~2001.9)

#### **Education:**

1979 (Japanese studies), Kansai University of Foreign Language Studies, Hirakata, Osaka Japan

1983 B.Sc. (Biology), Fort Lewis College, Colorado

1986 M.Sc. (Zoology), Kyoto University, Japan

1989 D.Sc. (Zoology), Kyoto University, Japan

Languages Spoken: English (native), Japanese (professional fluency), Swahili (basic working fluency)

#### **Professional Organizations and Duties:**

American Primatological Society (Associate Editor 2004~)

Primate Society of Japan (Editorial Secretary 2004~2015)

PRIMATES Associate Editor (2002~2005; 2015~)

Advisory Board (1999~2001)

Scientific Reports (Editorial Board 2012~2021)

African Primates (Editorial Board 2013~)

Asian Primate Journal (Editorial Board 2013~)

Conference Papers in Biology-Zoology Section (Editorial Board)

Anthropologial Science (Associate Editor 2012~)

Journal of Ethnobiology and Ethnomedicine (Associate Editor)

Vidyodaya Journal of Humanities and Social Sciences (Editorial Board, 2020.2~)

Borneo Journal of Medical Sciences (Editorial board (2021~2023)

IUCN /SSC & Re-introduction Specialist Group (RSG): (Serving member-consultant)

IUCN SSC Primate Specialist Group - Africa Section: (Serving member-consultant 2014~)

IUCN SSC Primate Specialist Group – South Asia, South East Asia Sections: (Serving member-consultant 2021~)

International Primate Society (Lifetime Member)

Royal Asiatic Society of Sri Lanka (Lifetime Member 2011.9~)

International Society of Ethnopharmacology (Editorial Consultant)

Societe Française d'Ethnopharmacologie (Scientific advisory board)

Kyoto University English Newsletter 'Rakuyu' (Senior Editor - 2007-2009)

Society for Wildlife and Nature (S.W.A.N. Taiwan) International Advisor

#### Awards & Recognition:

1993 Primate Society of Japan's Award for Overseas Research

1997 Frucht Memorial Lecturer (Key-Note Speaker), University of Alberta

1999 Primate Society of Japan's "Takashima Prize"

2000 'The Asia 500' Baron's Special 2000 Award for Global Achievement

2001 Presidential Award '500 Great Minds' Barons Who's Who (USA)

2007 ~ Lifetime Honorary member of Associazone Primatologica Italiana

2013 Primate Most Cited Paper Award "Monkeys in the middle",

2016 Primates Most-Cited Paper Award: "The effect of urban and rural habitats and resource type on activity budgets of commensal rhesus macaques (*Macaca mulatta*) in Bangladesh. Primates 54:49–59. MF (Jaman and M. A. Huffman)

2018 Primates Social Impact Award "Beneficial effects of hot spring bathing on stress levels in Japanese macaques. 59:215-225. (Takeshita, RSC, Bercovitch FB, Kinoshita, K, Huffman MA).

## Journals refereed for:

African Journal of Plant Science, American Journal of Physical Anthropology, American Journal of Primatology, American Institute of Biological Sciences, ANIMAL, Animal Behavior, Anthropological Science, Appetite, Journal of Archaeological Science, Asian Journal of Primatology, Behaviour, Behavioral and Brain Science, Behavioral Processes, Behavior and Physiology, Biology Letters, Biotropica, Brazilian Journal of Pharmacognosy, Chemical Ecology, Child Development Research, Current Anthropology, Current Biology, Current Clinical Pharmacology, EcoHealth, Emerging Infectious Diseases, Ethology, Evolution & Human Behavior, Evolutionary Anthropology, Folia Primatologica, Frontiers in Ecology and the Environment, Helminthologia, International Journal of Comparative Psychology, International Journal of Primatology, International Journal of Parasitology, Journal of Ethnobiology, J.S. Guggenheim Memorial Foundation-Canada, Journal of Ethnopharmacology, L.S.B. Leakey Foundation, Journal of Malaysian Science, Journal of Threatened Taxa (JoTT), Mammalia, Mammal Study Natural Sciences and Engineering Research Counsel (Canada), Molecular Ecology Resources, National Science Foundation (USA), Neuroscience, Parasite, Parasitology, Philosophical Transactions of the Royal Society B, PloSOne, Primates, Primatologie, Proceedings of the Royal Society B: Biological Sciences, Range Ecology and Management, Scientific Research and Essays, Scientific Reports, The Natural Environment Research Council (UK), International Journal of Nutrition and Metabolism, Trends in Evolutionary Anthropology, Wildlife Conservation- Japan, Journal of Virology, International Journal of Physiological Anthropology,

## Diploma & Graduate Degree Students, External PhD Advisor:

- 1. Teruyoshi Takagaki (Masters in Agricultural Sciences, 1991) "Chemical constituents of *Vernonia amygdalina*, a possible medicinal plant used by wild chimpanzees", Faculty of Agriculture, Kyoto University [collaborating advisor]
- 2. Mitsuo Jisaka (Doctor of Agricultural Sciences, 1992) "Bioactive Constituents of *Vernonia amygdalina*, a possible medicinal plant used by wild chimpanzees.", Faculty of Agriculture, Kyoto University [collaborating advisor]
- 3. Daisuke Izutsu (Masters in Agricultural Sciences, 1993) "Steroids, their related compounds and antiparasitic activity of *Vernonia amygdalina*, a medicinal plant used by chimpanzees in the wild", Faculty of Agriculture, Kyoto University. [collaborating advisor]
- 4. Gail Renehan (VM, Tufts University, Boston, U.S.A.) "Evaluation of the potential for the use of medicinal plants in the treatment of parasite infections in captive chimpanzees of African Zoos and Sanctuaries, 1995, 1996" [external advisor]
- 5. Michelle G. Burrows (DVM, Glasgow University, U.K.) "Investigation of the intestinal parasites of chimpanzees in the Budongo Forest, Uganda- 1996" [external advisor]
- 6. Jessica Zippin (Masters in Geology, 1999) "Geochemistry of termite mound soils ingested by chimpanzees of the Mahale Mtns.- 1995, 1996", York University, Canada. [co-advisor]
- 7. Laura Ketch (Masters in Botany, 2000) "Microbiology of termite mound soils ingested by chimpanzees of the Mahale Mountains. 1996", University of Toronto, Canada. [co-advisor]
- 8. Linda Turner (MSc 1994) "Laterality in Activities of the Japanese Macaques of Arashiyama, (Ph. D received March 2000) "Feeding Ecology of chimpanzees in the Mahale Mountains, Tanzania 1994 1997." Dept. of Zoology, Kyoto University. [co-advisor]
- 9. James Wakibara (MSc 2000) (PhD. 2003) The adaptive significance of Geophagy in Japanese Macaques of Arashiyama-; Seed dispersal of chimpanzees in the Mahale Mountains." Dept. of Zoology, Kyoto University. [co-advisor]
- 10. Ivona Foitova (PhD 2003): "Host-parasite relationship and self-medication in the wild

- orangutan of Northern Sumatra", Brno University, Brno, Czech Republic [external advisor]
- 11. Sylvia K. Vitazkova (PhD 2005): "Ethnobotany, zoopharmacognosy of wooly monkeys in Belize." Columbia University, NY [co-advisor, examiner]
- 12. Amani Kitagile (MSc 2005, University of Dar es Salaam, Dept. Zoology): Ecology and conservation of colobus and guenons of the Amani Nature Reserve, Tanga, Tanzania. [external advisor]
- 13. Liza R. Moscovice (PhD 2005, University of Wisconsin-Madison) "Ecology and Behavior of wild chimpanzees on Rubondo Island, Tanzania",. [collaborator, co-advisor with Chuck Snowden]
- 14. Tom Gillespie (PhD 2005 Univ. Florida-Gainesville) Colobine and Guenon parasite infections, foraging behavior and anthelmintic properties of the diet.", University of Florida, Gainesville [external advisor and external examiner]
- 15. Sabrina Krief (PhD 2005, Museum of Natural History, Paris) "Kibale chimpanzee health, pharmacognosy of diet and self-medication in the Kibale Forest, Uganda" [collaborator and co-advisor]
- 16. Charmalie A.D. Nahallage (MSc 2005, PhD 2008, Kyoto University, Primate Research Institute,) "Stone handling behavior in Japanese macaques: biological, environmental and social perspectives of a cultural behavior" Principal advisor
- 17. Jared Bakuza (MSc 2006, University of Dar es Salaam, Dept. Zoology) "Ecological parasitology of chimpanzees in Gombe National Park, Tanzania." [external advisor]
- 18. M. Firoj Jaman (MSc March 2006, PhD 2010, Kyoto University, Primate Research Institute,) "The Affect of Environmental Differences on Behavioral Budgets and the Feeding Strategies of Captive Japanese Macaques (*Macaca fuscata*): A Social-Ecological Approach to Assessing the Contribution of Natural Vegetation as Social and Nutritional Enrichment." Principal advisor
- 19. Christine J. Rheinhart (PhD 2008, University of Lethbridge, Alberta CA) "Cooperation and competition during play fighting in tonkean and Japanese macaques: an examination of juvenile behaviour within egalitarian and despotic social systems" [external examiner]
- 20. Damiana FC Ravasi (PhD 2009, University of Cape Town, Cape Town SA) "Gastrointestinal parasite infection in chachma baboons (*Papio h. ursinus*) of Cape Peninsula, South Africa: the influence of individual, troop and anthropogenic factors. [external examiner]
- 21. Andrew J.J. MacIntosh (PhD 2011, Kyoto University, Primate Research Institute) "Health maintenance, disease ecology, and the potential for self-medication in *Macaca fuscata yakui*". Principal advisor
- 22. Jaime Castillo Garcia (MSc 2011, University of Malaya) The Malasian slow loris (*Nyctocebus coucang coucang*) in the wild: A study combining radio telemetry and molecular biology. [external examiner]
- 23. Paula Anne Pebsworth (PhD 2012, Kyoto University, Primate Research Institute) "An investigation of geophagic and ranging behavior of chacma baboons (*papio hamadryas ursinus*) living in a human-modified habitat. Principal advisor
- 24. Ilona Profusova (MVS 2012) Department of Parasitology, University of Veterinary and Pharmaceutical Sciences, Brno, Czech Republic) Biology and Ecology of *Troglodytella*

- abrassarti in the common chimpanzee. [external examiner]
- 25. Rafaela Sayuri Cicalise Takeshita (M.Sc. 2013, Kyoto University, Primate Research Institute) Non-invasive analysis of adrenal hormones in captive Japanese macaques. Principal advisor w/ Fred Bercovitch
- 26. Fany Brotcorne (PhD 2014, Behavioral Biology Unit, University of Liege, Belgium) Human-primate interface, long-tailed macaque behavioural ecology and parasitology. [External committee, defense jury member, defended and examined on 2014.9.23]
- 27. Yena Kim (PhD Kyoto University, Primate Research Institute) Prosocial behavior in captive orangutan. (Co-advisor, defense committee member, 6.2017).
- 28. Josué Samuel Alejandro Pastrana (MSc, Kyoto University, Primate Research Institute) Behavioral assessment of the effect of different environments on the stress levels male Japanese macaques. (Principal advisor)
- 29. Azucena G. Enríquez Magaña (Masters candidate, Centro de Estudios e Investigaciones en Comportamiento CUCBA-Universidad de Guadalajara, Mexico) Fur rubbing behavior in captive spider monkeys in the Guadalajara Zoo. [co-supervisor with Prof. Gerardo A Ortiz Rueda]
- 30. Himani Nautiyal (M.Sc. 2015.5 Wildlife Biology, A.V.C College Mayiladuthurai, Tamil Nadu, India) Life High Up In: The Himalayas: Factors Affecting The Activity Budgets And Diet Of Village And Forest Dwelling Central Himalayan Langurs (*Semnopithecus schistaceus*) In The Kedarnath Wildlife Sanctuary, Uttrakhand India. [External advisor]
- 31. Mwanahamisi Issa (Ph.D. 2015, Institute of Vertebrate Biology Academy of Sciences of the Czech Republic) Diversity and host specificity of malaria agents in African primates [external examiner, successfully completed November 2015]
- 32. Lena Pfluger (PhD 2016, Department of Anthropology, University of Vienna, Austria) [external examiner, successfully completed December 16, 2016]
- 33. Sofia Kaliope Bernstein (PhD 2016, Kyoto University, Primate Research Institute) The Vocal Repertoire of Tibetan Macaques: A Quantitave Analysis, Congeneric Comparisons, and Species-Specific Calls. [Principle academic advisor, co-advisor Koda]
- 34. Wei Yi Amanda Tan (PhD 2016, Nanyang Technological University, School of Humanities and Social Sciences, Psychology) Behavioral processes and social influences on the development of stone-tool use in long-tailed macaques. [External examiner, successfully November 2016]
- 35. Nelson Broche Jr. (2019 MSc), Kyoto University, Primate Research Institute) Development of a non-invasively determined measurement of stress and 'pleasure' in Japanese macaques using hormones excreted in saliva (Principal advisor)
- 36. Josué Samuel Alejandro Pastrana (PhD candidate, Kyoto University, Primate Research Institute) Behavioral and hormonal assessment of the effect of different environments on the stress levels male Japanese macaques. (Principal advisor)
- 37. Milena Canzler (Masters in Environmental Biology, Animal Behavior, University of Utrecht, The Netherlands) On the potential use of stimulant drugs by wild animals. [Supervisor of thesis writing in partial requirement for the degree]
- 38. K. Santhosh (2017, PhD, Bharathiar University, Coimbatore, India) Study of population,

- ecology and conservation of lion-tailed macaque *Macaca silenus* in Sirsi-Honnavara, western Ghats, Karnataka. [external examiner, successfully completed January 9, 2017]
- 39. Renata Mendonca (PhD 2017, Kyoto University, Primate Research Insitute) Mother-infant behaviour in wild orangutans (Pongo pygmaeus morio), Danum Valley, Sabah, Borneo. Secondary advisor w/ Tetsuro Matsuzawa, Misato Hayashi.
- 40. Victoria Pallante (2017, PhD, Universita Degli Studi Firenze, Italy) Strategies to maintain group cohesion: embracing, agonistic support and post-conflict affiliation in two tolerant species (*Theropithecus gelada AND Macaca Tonkeana*) (External examiner)
- 41. Y. Kurihara (2017, PhD Kyoto University, Primate Research Institute). Feeding competition in Japanese macaques in Yakushima: effects of intergroup hostility and group size. [PhD evaluation committee member]
- 42. Benjamin Siart (PhD, 2017, Department of Anthropology, University of Vienna, Austria), Social status, prosocial behavior and measurements of endocrine and protein stress markers in humans. [external examiner, 2017]
- 43. Jade Burgunder (PhD 2018, Department of Botany and Zoology, Faculty of Science, Masaryk University, Czech Republic) Complexity in behavioural organization: a novel approach to assessing parasite infection. [external examiner, October 2018].
- 44. Rafaela Sayuri Cicalise Takeshita (PhD 2018), Kyoto University, Primate Research Institute) Factors regulating steroid hormones in Japanese macaques and orangutans (Principal advisor w/ Fred B Bercovitch)
- 45. Cecile Sarabian (PhD, 2019), Kyoto University, Primate Research Institute) On the origins of disgust: Hygiene, infection-risk avoidance and health maintenance in Papionini and Hominini [PhD evaluation committee member]
- 46. Liesbeth Frias (PhD, 2018), Kyoto University, Primate Research Institute) Host –parasite community interactions in a human-modified habitat [PhD evaluation committee member]
- 47. Bidyut Sarania (PhD 2019) Tezpur University, Assam, India. Population Distribution, Behavioural Ecology and Morphometry of *Macaca munzala*, Arunachal Pradesh, India. [PhD evaluation committee member]
- 48. Himani Nautiyal (PhD 2020), Kyoto University, Primate Research Institute, Behavioral ecology of the Central Himalayan Langur (*Semnopithecus schistaceus*) in a human dominated landscape: Multi-species interactions and conservation implications [primary advisor, committee chair].
- 49. Raquel Costa (PhD 2020), Primate Research Institute, Kyoto University) 'How young gorillas see the world: assessing the impact of ecotourism in Bwindi Impenetrable National Park, through the eyes of the youngsters' [Co-academic advisor, with/ M Tomonaga, M Hayashi].
- 50. Rosemary Blersch (PhD 2020~202?), University Lethbridge, Canada, Parasitological study of primates in South Africa. [PhD committee member]
- 51. G. Vanaraj (PhD 2021), Bharathiar University, Coimbatore, Tamil Nadu, India, Population Status, Distribution, Activity and Dietary Budgets of Tufted Grey Langur (*Semnopithecus priam priam*) at the Kalakkad-Mundanthurai Tiger Reserve, Southern Western Ghats, Tamil Nadu [external reviewer]

- 52. Roy Hammer (Masters, 2022), Utrecht University. Medical School in the Animal Kingdom? The role of innate propensities and social learning in self-medicative behaviour in animals. Thesis in partial fulfillment of the Master's Degree. [thesis co-supervisor with Anne Marijike Schel]
- 53. Anna Zanoli (PhD 2022), University of Turin, Unimodal and multimodal communication of emotional states in human and non-human primates. [external reviewer; academic advisor Prof. Ivan Norscia]
- 54. Elodie Freymann (PhD candidate, Institute of Cognitive and Evolutionary Anthropology Keble College, Oxford University), Intergenerational Transmission of Self-Medicative Knowledge in Chimpanzees? [co-advisor with Susana Carvalho]

## Hosted postdoctoral research fellows, visiting scholars & undergraduate internships

- 1. Jean-Babtiste Leca (2003-2005, 18 months) Lavoisier Grant, "Ethnographic approach to stone handling, a behavioral tradition in 10 groups of Japanese macaques, *Macaca fuscata*: Environmental, demographic, and social factors."
- 2. Klara Petrzelkova (2004.6.1 8.29) JSPS short term-visiting researcher. "Feeding behavior and possible medicinal plant use in chimpanzee populations on Rubondo Island National Park, Tanzania."
- 3. Cecile M. Garcia (2006.8.16 2007.12.20, 18 months) Lavoisier Grant, "Social stress, nutritional state and reproduction in female Japanese macaques (Macaca fuscata)
- 4. Alexander Hernandez (2006.8.29 2008.9.27, 24 months), JSPS Post-Doctoral Fellowship, "Structure and energetics of the Yakushima Island food web sustaining Japanese macaques (*Macaca fuscata*) and their helminth parasites."
- 5. Jean-Babtiste Leca (2007.11.28 2009.11.27, 24 months) JSPS Post-Doctoral Fellowship, "Japanese macaque behavioral traditions: demographic and social factors influencing diffusion and maintenance"
- 6. Broox Boze (2008.6.24 8.20) NSF-JSPS Summer Internship Program "Behavioral responses of a coprophagous beetle to a nematode parasite infecting Japanese macaques on Yakushima Island, Japan".
- 7. Cecile Garcia (2008.8.29 2008.11.28, 2 months) JSPS Post-Doctoral Short-term Fellowship, "Social stress, nutritional state and reproduction in female Japanese macaques (*Macaca fuscata*)."

## **Professional Consulting Activities**

Scientific Advisor to:

BBC Natural History Wildlife Unit, Bristol U.K. (1992-)

National Geographic Society, Washington D.C. (1993-)

ANC Productions, Tokyo, Japan (1989-)

NHK, Tokyo, Osaka, Japan (1983-)

University of the Air, Tokyo, Japan (1998-)

Natural History New Zealand Ltd. (2001-)

Discovery Channel, CANADA (2001-)

K Production, FRANCE (2013) for ARTE International

## **Research Activities**

(see publications for details)

1977 (1 month) Observation of free-ranging vervet monkeys on St. Kitts Isl., Northern Antilles, Caribbean (International Expedition Training Institute).

1979-80, 1983- to present, Ecological and sociological studies of the Japanese monkey, Japan (Arashiyama, Takasakiyama, Funekoshiyama, PRI captive colonies)

1983 (1 month) behavioral study of feral cattle on Kuchinoshima Isl., in the Tokara Archipelago, Japan

1985 (6 months) Sociological study of the M Group chimpanzees in the Mahale Mountains National Park, Tanzania

1987 (6 months) Socio-ecological study of the M Group chimpanzees in the Mahale Mountains National Park, Tanzania

1989 (6 months) Ecological and parasitological study of the M Group chimpanzees at Mahale Mountains National Park, Tanzania

1991-92 (4 months) Ethological, phytochemical, and parasitological study of the M Group chimpanzees in the Mahale Mountains National Park, Tanzania

1991- current, Principle organizer of The C.H.I.M.P.P. Group (Chemo-ethology of the Interactions of Hominoids with Medicinal Plants and Parasites).

1993-94 (4 months) Ethological, phytochemical and parasitological study of the M Group chimpanzees in the Mahale Mountains National Park, Tanzania

1995-96 (4 months) Ethological, phytochemical and parasitological study of the M Group chimpanzees in the Mahale Mountains National Park and Gombe Stream National Park, Tanzania

1996 (1 month) Ethological, microbiological and parasitological study of the M Group chimpanzees in the Mahale Mountains National Park and Gombe Stream National Park, Tanzania

1997 (1 month) Ethological, botanical and parasitological study of the Bossou Group of chimpanzees in Guinea West Africa.

1998 (21 days) Botanical survey and plant collection in Tanzania and pharmacological study of medicinal plant activity on swine parasites at the Danish Center for Experimental Parasitology, Copenhagen Denmark.

1998 (1 month) Ethological, botanical and parasitological study of the Sonso Group, Budongo Forest, Western Uganda; collaborative exchange visit for pharmacological study of medicinal plant activity at the laboratories of Homeopathy & Pharmacognosy, Parasitology, Universite de la Mediterranee Aix-Marseille, Marseille France; University of Leiden, Leiden, The Netherlands; Danish Center for Experimental Parasitology, Copenhagen Denmark.

1999 (1 month) Phytochemical study of the Mahale M group chimpanzees in the Mahale Mountains National Park, Tanzania (October)

2000 (1 month) Ethological, phytochemical and parasitological study of the M Group chimpanzees in the Mahale Mountains National Park, Tanzania. Preliminary site survey of Rubondo Island National Park, TZ (September)

2001- 2009: Principle investigator of Rubondo Island Chimpanzee Development Initiative: Integrating Research and Conservation. Long-term research project for work on Rubondo Island National Park

2002 (January - February) Site survey of Rubondo Island National Park, TZ: SIV cpz sample, general survey of the M Group chimpanzees in the Mahale Mountains National Park and Rubondo Island National Park, TZ

2002 (June) Ethological study, SIVcpz sampling of the M Group chimpanzees in the Mahale Mountains National Park, Tanzania, TZ.

2003 (February) Ecological survey of chimpanzee habitat on Rubondo Island National Park, TZ; 3 day visit to Mahale.

2003 (September) Behavioral study on the acquisition and transmission of leaf swallowing behavior in three captive groups of chimpanzees at Parco Natura Viva-Safari Park, Bussolengo-Verona Italia.

2003 (December) Ethological, phytochemical and parasitological study of the M Group chimpanzees in the Mahale Mountains National Park, Tanzania.

2004 (October) Primate observations in the wet and dry zone regions of central (Kurunegala, Kandy area) and northern (Anuradhbura) parts of Sri Lanka.

2005 (January) Short survey of Rubondo Island National Park and Mahale Mountains National Park chimpanzees, TZ.

2005 (March) Site visit and discussions with collaborators in primate foraging research program. National University of Taiwan, Institute of Ecology and Evolutionary Biology, Taipei & Fushan Research Field Station and Botanical Gardens, Ilan County

2006 (January) Primate observations in the wet and dry zone regions of southwestern (Sinharaja), central (Kandy area) and northern (Polonnaruwa) parts of Sri Lanka.

2006 (April-May) Visit, lectures and discussions with collaborators in primate research. Institute of Wildlife Conservation, National Pingtung University of Science and Technology (Pingtung), Kaoushiung Medical University (Kaohsiung), Kenting National Park, southern Taiwan

2007 (February) Survey of primates in the southern and central regions of Sri Lanka. Visit to Bandipur National Park and Mysore region, southern India to observe bonnet macaques and hanuman langurs.

2007 (March) Visit, lectures and feeding experiments on captive orangutans with collaborators in primate research at the Institute of Wildlife Conservation, National Pingtung University of Science and Technology (Pingtung), Kaoushiung Medical University (Kaohsiung) Taiwan.

2007 (September-October) Survey of primates in Karnataka (Bandipur NP), Kerera (Sharavathi Wildlife Sanctuary) and Tamil Nadhu (Indira Ghandi Wildlife Sanctuary, Western Ghats, Anaimalai hills, Valparai) states in southern India to observe bonnet macaques, lion-tailed macaques, nilgiri langurs, slow loris and hanuman langurs. Based out of National Institute for Advanced Studies, Bangalore.

2007 (November 4-12) Five-part lecture series: Fundamentals of Primatology, at the Behavioral Research Institute in the University of Guadalajara-Mexico.

2008 (May 7-12) "The animal roots of herbal medicine- People learning from animals about

ways to cure disease. Another reason why we need to conserve plant and animal bio-diversity" Lectures at the Institute of Wildlife Conservation, National Pingtung University of Science and Technology (Pingtung), Kaoushiung Medical University (Kaohsiung) Taiwan. Collaboration on civet leaf swallowing and parasite expulsion.

2008 (August 14-28) Indonesia, Bali, Ubud temple long-tail macaque stone handling study.

2009 (February 23 – March 24) Sri Lankan Primate Surveys; India New Delhi, brief observations of urban rhesus monkey group.

2009 (October) Sri Lankan Primate Surveys in Western Province.

2010 (March 8 - 24) Sri Lankan Primate Survey in Western Province, examination of extent and fossil primates, participated in cultural anthropological field trip to interview EasternVedda in Batticaloa Provence, lectures at Sri Jayawardenepura University and Post-graduate Institute of Archaeology, visit to Potana and Anuradhapura archaeological sites.

2010 (March 24-27) Singapore; Seminar at Nanyang University, observation of longtailed macaques.

2010 (August 17-29) Vietnam, Khan Vinh Province, Khanh Phu Commune, Primate survey and fecal sample collection for the study of monkey malaria (*Plasmodium knowlesi*) transmission in the Raglai indigenous human population in a mountainous area of south central Vietnam.

2010 (December 7-23) Sri Lanka Primate Surveys in Central Provence.

2011 (January 10–23) Observation of wild chacma baboons in the Western Cape of South Africa.

2011 (February 20-March 7) Vietnam, Khan Vinh Province, Khanh Phu Commune, Primate survey and fecal sample collection for the study of monkey malaria (*Plasodium knowlesi*) transmission in the Raglai indigenous human population in a mountainous area of south central Vietnam.

2011 (November) Sri Lanka Primate Surveys in Western, Central and Subaragamuwa Provinces.

2012 (February 25 – March 9) Vietnam, Cuc Phuong National Park & Khan Vinh Province, Khanh Phu Commune, Primate survey and fecal sample collection for the study of monkey malaria (*Plasodium knowlesi*) transmission in the Raglai indigenous human population in a mountainous area of south central Vietnam.

2012 (June 3-22 / 23 -30) Sri Lanka primate surveys / and a week at National Institute of Advanced Studies in Bangalore, India

2012 (November 6 – 22) Sri Lanka primate survey and sample collection.

2013 (January 12-27) Sri Lanka primate survey and sample collection.

2013 (March 3-13) Khan Vinh Province, Khanh Phu Commune, Primate survey and fecal sample collection for the study of monkey malaria (*Plasodium knowlesi*) transmission in the Raglai indigenous human population in a mountainous area of south central Vietnam. Intestinal parasite survey of Monkey Island macaques.

2013 (June 16-July 1) Tanzania, Mahale Mountains National Park, behavioral ecology study and filming of program 'Animal Doctors', K productions for ARTE TV.

2013 (August 17- /) Sri Lanka primate survey and sample collection.

2013 (October 13-18 India/ 19-25 Nepal/ 26-31 Vietnam) Visit to NIAS Bangalore/ Primate survey and sample collection Nepal/ Khan Vinh Province, Khanh Phu Commune, Primate survey and fecal sample collection for the study of monkey malaria (*Plasmodium knowlesi*) transmission in the Raglai indigenous human population in a mountainous area of south central Vietnam.

2014 (June 12-26 Sri Lanka/ 27- July 4 China) Sri Lanka primate survey and sample collection (Western Province-Wilpattu NP, Northern Province to Jaffna).

2015 (January 20- February 8 Sri Lanka) Sri Lanka primate survey, sample collection and DNA extraction (Mihintale NCP, South, Eastern SL).

2015 Taiwan

2015 (June 4-29) Field site visit to see Central Himalayan langurs in Mandal village and Chopta, Uttarakhand, India.

2015 (July 31-August 17) Field trip. ITP2015 training program in Sri Lanka (Participants sponsored by PWS), Field trip co-organizer, resource person.

2015 (October 24 – November 3) Khan Vinh Province, Khanh Phu Commune, Monkey Island, Pet monkey survey and fecal/blood sample collection for the study of monkey malaria (*Plasodium knowlesi*).

2015 (December 20 – 2016 January 11) Sri Lanka primate survey, behavioral observation, sample collection and DNA extraction.

2016 (May) Lectures at Taipei National University, Kaohsiung Medical University, National Pingtung University of Science and Technology.

2016 (June) Paper presentation at Oxford University: International Symposium on Primate Archeology, visit to Trinity University, Dublin Ireland.

2016 (July 23~30) "Animal self-medication: ethnoveterinary medicine without human cultural bias?" *Joint Natural Products Conference 2016 Copenhagen*, Copenhagen, Denmark,

2016 (August 7~24) Field site visit to see Central Himalayan langurs in high altitude alpine meadows of Rudranath, Uttarakhand, India.

2016 (October 14~27) Co-organizer of 5<sup>th</sup> Asian Primate Symposium. Site visits to Pollonaruwa, Nachimale temple, Dombagaskanda Forest Reserve, Sri Lanka (transit visit to Bangkok).

2017.3.8~27 Primate survey of montane and arid areas (Knuckles, Nuwara Eliya, Mannar Island).

2018.2.18~3.9 Primate survey of montane, dry zone, and wet areas (Knuckles, Mihintale, Kotiyakumbura).

2018.08.28~.09.16 Primate survey of dry zone langurs and human-primate conflict of the Western Province.

2018.11.20~.11.29. International Training Program in Terrestrial and Marine Ecology, Field trip, Co-organizer, resource person.

2018.12.25-26. Stone handling behavior in free-ranging Taiwanese macaques of Mt. Shoushan (Kaohsiung) and in the Animal Rescue Centre (Pingtung National University of Science and Technology).

2019.3.9-24. Primate survey of dry zone grey langurs in Mannar, Jaffna, Mulaitivu, Trincomalee and Mihintale.

2019.5.23, 25-26. Site visit and discussion for field study on self-medicative behavior in wild horses and free-ranging Maremmena cattle and pigs. San Rossore State Park and Tunata Paganico organic farm. Tuscany, Italy.

2019.6.18~14. Site visits and discussion for field study of monkey malaria (P. knowelsi) in Sabah State Malaysia (Borneo).

2019.12.11~20. Site visit and review of data being collected on stone-handling in Taiwanese macaques at the Wildlife Rescue Center, National Pingtung University of Science and Technology, Nepu (Pingtung), southern Taiwan.

2020.3.5-19 Sri Lanka primate survey. Knuckles Range.

2021.3~ COVID-19

## **Public Education, Popular Science Activities**

## A few textbooks, technical reference citations

- 1. *The Plant-Book. A portable dictionary of the vascular plants.* 2<sup>nd</sup> Edition. (1997). D. J. Mabberley, Cambridge University Press, Cambridge. *Vernonia amygdalina* description includes use of chimpanzees when sick and bioactivities properties of pith. (p. 744).
- 2. Parasitology & Vector Biology 2nd Edition (2000). William C. Marquardt, Richard S. Demaree, Robert B. Grieve, Harcourt Academic Press, San Diego. "Self-treatment for parasites" (text box p. 390).
- 3. *The Natural History of Medicinal Plants* (2000). Judith Sumner, Timber Press, Portland. "Chimpanzees and self-medication" (pp. 149-150).
- 4. Natures Medicine Plants that Heal (2000) Joel L. Sherdlow, National Geographic Society, Washington, D.C. "Vernonia amygdalina, includes description of medicinal uses for humans and chimpanzees. (p. 388). On animal self-medication (pp. 176-177, 180).
- 5. *Parasite Rex. Inside the world of nature's most dangerous creatures* (2000). Carl Zimmer, The Free Press, New York (pp. 201-202).
- 6. *Medicine Quest. In search of Nature's Healing Secrets* (2000). Mark J. Plotkin, Viking Penguin Press, New York, "Plants of the Apes" (pp. 163-165, 167-169).
- 7. Wild Health. How animals keep themselves well and what we can learn from them (2002) Cindy Engel, Houghton Mifflin Company, Boston, "chimpanzees" (pp. 46, 200), parasites (pp. 139, 140, 142-143, 146), "self-medication, determination of" (p. 37). 「動物たちの自然健康法― 野生の知恵に学ぶ」(2003)シンディ エンジェル(羽田節子訳)紀伊國屋書店
- 8. *Primate Behavioral Ecology* 1<sup>st</sup> ~ 4th Editions (2000, 2003, 2007, 2011) Pearson Prentice Hall; 5<sup>th</sup> Edition (2017), Routledge. Karen Strier, Allyn and Bacon, Boston.; "Box 6.1 Forest Pharmacy".

- 9. Parasites and the Behavior of Animals (2002). Janice Moore, Oxford Series in Ecology and Evolution, Oxford University Press, Oxford. "Self-medication" (pp. 135-137).
- 10. Modern Biology (2005~ Editions) Holt, Rinehart and Winston, Austin. Science in Action Feature "Do animals self-medicate? (p. 598).

#### Some recent selected on-line interviews & articles

"Monkey Culture" The Washington Post, December 10, 1997, Lucille Craft. https://www.washingtonpost.com/archive/1997/12/10/monkey-culture/7d0918a9-22da-4e06-92b7-e9546789fe69/

"How man apes animal medicine" The Telegraph, Aisling Irwin. Dec. 14, 2000 <a href="http://www.telegraph.co.uk/news/science/science-news/4757357/How-man-apes-animal-medicine.html">http://www.telegraph.co.uk/news/science/science-news/4757357/How-man-apes-animal-medicine.html</a>

"Apes were first to get high on drugs" The Telegraph 26 December 2001. Roger Highfield http://www.telegraph.co.uk/news/worldnews/1366329/Apes-were-first-to-get-high-on-drugs.ht ml

"Hot tub monkeys" offer eye on nonhuman "culture" National Geographic News, February 6, 2004. Bijal P. Trivedi

http://news.nationalgeographic.com/news/2004/02/0206 040206 tvmacaques.html

Nature's Pharmacy: Ancient Knowledge, Modern Medicine: Really Wild Remedies. University of Iowa Hospital & Clinics, Medical Museum.

 $\underline{http://www.uihealthcare.com/depts/medmuseum/galleryexhibits/naturespharmacy/remedies/wild.html}$ 

"Self-medicating animals" The Scientist, October 23, 2012 <a href="http://www.the-scientist.com/?articles.view/articleNo/32957/title/Self-Medicating-Animals/">http://www.the-scientist.com/?articles.view/articleNo/32957/title/Self-Medicating-Animals/</a>

"Natural-born doctors" The Scientist, October 23, 2012 http://www.the-scientist.com/?articles.view/articleNo/32966/title/Natural-Born-Doctors/

Herbal Medicina came from animals. The Hindu, June 27, 2013.

 $http://www.thehindu.com/sci-tech/health/medicine-and-research/herbal-medicine-came-from-animals/article4853660.ece?utm\_source=MostCommented&utm\_medium=Homepage&utm\_campaign=WidgetPromo$ 

"Wild Medicine- Some animals have learned how to use plants to heal themselves" January 19, 2014. https://student.societyforscience.org/article/wild-medicine

"Study notes widening disease transmission by monkeys" Sci Dev Net August 20, 2014. http://www.scidev.net/asia-pacific/malaria/news/study-notes-widening-disease-transmission-by-monkeys.h

## Animaux médecins : La science inspirée par Curious George

https://www.actualitte.com/insolite/animaux-medecins-la-science-inspiree-par-curious-george-5 2415.html

"Animals Hack Nature's Medicine Cabinet – We Should Too" Discover, Science for the Curious. December 22, 2014

 $http://blogs.discovermagazine.com/crux/2014/12/22/animals-hack-natures-medicine-cabinet/\#. \ VJhLo0CwIA$ 

"News Features: Animals that self-medicate." Joel Shurkin December 9, 2014 PNAS 111(49): 17339-17341. http://www.pnas.org/content/111/49/17339.full

How animals SELF-MEDICATE: Dogs, elephants, chimps and even parrots use natural remedies to treat digestive problems and even induce birth. Mail Online December 10, 2014

http://www.dailymail.co.uk/sciencetech/article-2868348/Do-animals-SELF-MEDICATE-Dogs-elephants-chimps-parrots-use-natural-remedies-treat-digestive-problems-induce-birth.html

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## Automedicación animal

http://www.acercaciencia.com/2015/01/23/automedicacion-animal/

Is self-medication the future of pharmacy?" March 9, 2015 | Deccan Herald (India) http://www.deccanherald.com/content/464489/is-self-medication-future-pharmacy.html

用天然材料做药?动物也会 2014.12.16, Chinese introduction of Joel Shurkin article above. <a href="http://www.guokr.com/article/439671/">http://www.guokr.com/article/439671/</a>

Dr. Zoo: Radio interview on the field of animal self-medication (German).

The Self-Medicating Animal: What can we learn from chimps and sheep and maybe even insects that practice medicine on themselves? The New York Times On-line. A version of this article also appears in print on May 21, 2017, on Page MM68 of the Sunday Magazine with the headline: Doctor Who?

By MOISES VELASQUEZ-MANOFFMAY 18, 2017

 $\frac{\text{https://www.nytimes.com/2017/05/18/magazine/the-self-medicating-animal.html?rref=collection}{\text{n%2Fsectioncollection\%2Fscience\&action=click\&contentCollection=science\&region=stream\&module=stream\_unit\&version=latest\&contentPlacement=3\&pgtype=sectionfront}$ 

Press conference relaease. 野生ニホンザル 温泉でストレス解消か 京大グループ https://www3.nhk.or.jp/news/html/20180404/k10011390021000.html 日本語

https://www3.nhk.or.jp/nhkworld/en/news/20180404\_06/ English

## Hot Springs Lower Stress in Japan's Popular Bathing Monkeys

James Gorman New York Times:

https://nyti.ms/2Gvp3JB

Japanese macaques relieve stress in the hot springs. Ein heißes Affenbad zum Stressabbau (Ärzte Zeitung online, 04.04.2018)

https://www.aerztezeitung.de/panorama/article/961013/japan-heisses-affenbad-stressabbau.html

**The New Evolutionary Enlightenment**: Animal self-medication\_(Written interview to questions on animal self-medication; in Spanish and English; uploaded March 2021) <a href="https://ilevolucionista.blogspot.com/2021/02/automedicacion-animal-entrevista.html">https://ilevolucionista.blogspot.com/2021/02/automedicacion-animal-entrevista.html</a>

#### Podcasts and Webinar

The PrimateCast #42: An Interview with Dr. Michael Huffman April 29th 2016

http://www.cicasp.pri.kyoto-u.ac.jp/news/podcasts/primatecast-42-interview-dr-michael-huffman

#### **TEDxOsaka Animal Self-Medication**

https://www.youtube.com/watch?v=WNn7b5VHowM

# "The evolution of animal self-medication and lessons for the development of medicine and new medicines"

Plenary Lecture featured at the 64<sup>th</sup> International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA). Innsbruck, Austria. Sept. 1-5, 2019 <a href="https://www.ga-online.org/webinars-workshops">https://www.ga-online.org/webinars-workshops</a>

Association of Indian Primatology, livestream Webinar. 2020.08.13
The evolution of self-medication in primates and the origin of human medicinal plant use. YouTube <a href="https://www.youtube.com/watch?v=li5ZsOBpPP0">https://www.youtube.com/watch?v=li5ZsOBpPP0</a>
Facebook <a href="https://www.facebook.com/IndianPrimates/videos/632989237336466/">https://www.facebook.com/IndianPrimates/videos/632989237336466/</a>

#### **BBC New World Service Crowd Science**

Do animals use medicine? March 26, 2021

CICASP International Primatology Lecture Series, The past, present and the future June 16, 2021 Lecture #1 Huffman, M.A. Huffman ' Learning to become a monkey and other lessons for becoming a primatologist' YouTube https://youtu.be/0euvFq7gVkM

#### Selected public science television programs, radio interviews and consultation

- 1. 新二ホンザル学-21世紀への科学 1984. "New perspectives in Japanese macaque studies Science in the 21st Century" (1984) NHK. Featuring with. The history of Japanese primatology is presented by one of the pioneers in the field, Prof. Junichiro Itani, and features some recent findings by two of his students Yukio Takahata and Michael A Huffman (Kyoto University primatologists) in this NHK special program (in Japanese). This video was uploaded strictly for non-profit, educational, or personal use only. https://www.youtube.com/watch?v=VvEosziekbY
- 2. ウォッチング 「熱中 石で遊ぶニホンザル」1985 年 6 月 26 日: NHK 総合テレビ司会者 タモリ; ゲスト:河合雅雄 (京都大学霊長類研究所教授);マイケル・ハフマン (京都大学動物学教室) Watching "Feverish stone handling Japanese monkeys." NHK Sougo TV, 1985 June 26. Host Tamori, guests, Prof. Kawai, Masao (Primate Research Institute), Michael A Huffman graduate student (Kyoto University, Department of Zoology)
- 3. Chimpanzees use Medicine: 'New Station' Asahi TV evening program, aired in Feb. 1992. A popular evening news program of Asahi TV aired between 1985 to 2004. The program

presented on national TV for the first time, news about recent the research findings demonstrating the anti-parasitic properties of medicinal plants by chimpanzees in the Mahale Mountains of Tanzania. Featuring researchers Michael A Huffman and Koichi Koshimizu of Kyoto University, in Japanese. This video was uploaded strictly for non-profit, educational, or personal use only. <a href="https://www.youtube.com/watch?v=tRNdhZLfUb0">https://www.youtube.com/watch?v=tRNdhZLfUb0</a>

4. University of the Air (放送大学): A multi-part special series called "Human - In Search of the Roots of Humankind". This was originally produced by the University of the Air in Japanese as video course material. Later the scripts were translated into English and narrated by Michael A Huffman (Kyoto University) in collaboration with Professor Itani to share the information with an international audience. The species presented in this series represent some of the many important field sites featuring a diverse range of primate species around the world pioneered by Japanese primatologists of Kyoto University. Prof Itani, featured here toward the end of his career introduces each site and sets the stage for the on-site presenter, a primatologist responsible for the long-term work conducted at each site by his students over the years. These videos have been uploaded for educational purposes only with the intent to publicly archive its valuable information.: The Society of Japanese macaques, Social Groups of Prosimians, Gorilla Society, The Society of Chimpanzees.

Available on Primate I/O:

https://www.youtube.com/channel/UCRb9cKNQvqlWtVcPy5qghlQ

The New World Monkeys of Macarena, Colombia https://www.youtube.com/watch?v=m3Lm95BPOwI

- 5. "Wisdom of the Wild" (2000), Argo Productions Washington D.C. for Public Broadcasting System (USA). A national and later internationally televised documentary with special feature of chimpanzee self-medication research project at Mahale. (Appearance, interview, scientific advisor)
- 6. "Magic, murder, and medicine", BBC Radio 4 (2001), Interview for 2 part series on medicinal plants. (Interview, scientific advisor)
- 7. "Nature's Secrets" (2002), Discovery Channel, Toronto. An internationally televised documentary with special feature of chimpanzee self-medication research at Mahale. (Appearance, interview, scientific advisor)
- 8. "Dr. Animal" (2003), Tele Image Paris for Discovery Channel. An internationally televised documentary, with special feature of chimpanzee self-medication research at Mahale. (Appearance, interview, scientific advisor)
- 9. "Animal self-medication", BBC Radio 4 (2003), A special program on animal self-medication. (Interview, scientific advisor)
- 10. "Animal Medicine" (2004), St. Thomas, Prod., Aix en Provence, France for National Geographic Television Documentary on self-medicative behavior in the animal kingdom. (Appearance, interview, scientific advisor)
- 11. Animals Like Us- Culture (2009), National Geographic TV (St. Thomas, Prod., Aix en Provence, France). An internationally televised documentary with special feature of chimpanzee self-medication research at Mahale and Stone handling, a behavioral tradition in Japanese macaques. (Appearance, interview, scientific advisor)
- 12. Animals Like Us- Medicine (2009), National Geographic TV (St. Thomas, Prod., Aix en Provence, France). An internationally televised documentary on self-medication in animals with special feature of chimpanzee self-medication research at Mahale. (Appearance, interview, scientific advisor)

- 13. Animal Doctors (2014), ARTE television (Produced and Directed by R Productions, Jacques Mitsch), An internationally televised documentary on self-medication in animals with special reference to the history of self-medicative research by MA Huffman on chimpanzee self-medication research at Mahale. (French, German, English)
- 14. Life Story: Episode 'Courtship' (2014) BBC Wildlife History Unit (Narrated by David Attenborough), Scientific Advisor for Japanese macaque part of Episode 'Courtship', on-site at Arashiyama Japan.
- 15. Animals at Play (2020), BBC 2 part series on play in animals. Scientific, interviewee for sequence on stone handling in Japanese macaques of Arashiyama.
- 16. 新説! 所ジャパン #063 (2020) Shinsetsu! Tokoro Japan, Hot spring monkeys of Shiga Heights, Nagano. March 2, 2020 Fuji TV program (Appearance).

#### Museum exhibits

- 1. United States Botanic Garden, Washington D.C., Film and text of research included in 'Navipass Multimedia Tour handheld devise for self-guided educational narration of the botanical gardens. Used to describe use of chimpanzee medicinal plants in the gardens. May 2005 (Scientific advisor)
- 2. Ibaraki Prefectural Nature Museum, "Medicinal Plants: A Boxful of Gifts from Mother Nature", 33<sup>rd</sup> Exhibition, Special section on animal self-medication, with a focus on chimpanzees. On displayed from March 19-June 19, 2005. (scientific advisor, provided exhibit materials). ミュージアムパーク茨城県自然博物館「第33回企画展 YAKUSO 野山は自然のくるりばこ」、2005年3月19日~6月19日開催
- 3. The Kyoto University Museum, Kyoto, Special Exhibition "The Natural History of Medicine" On display from June 1 to September 1, 2003. (scientific advisor in charge of 'Animals and Medicine' section). 京都大学総合博物館、平成14年特別企画展「薬と自然詩」、2003年6月1日~9月1日開催