

CONFERENCE PROGRAM



8TH ISWE CONFERENCE

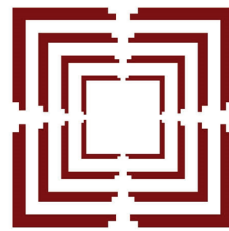
NOVEMBER
6TH-9TH, 2023

HOSTED BY

Ahmedabad University
Center for Cellular & Molecular Biology
Wildlife Institute of India

HELD AT

Riverview Retreat
Corbett National Park
Dhikuli, India



Ahmedabad
University



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

MONDAY NOVEMBER 6TH

- 9am – 4pm ISWE Board meeting (closed meeting)
- 9pm – 11pm ICEBREAKER DINNER – Left poolside lawn

TUESDAY NOVEMBER 7TH

- 10am – 1030 Opening words

1030 – 1115 **SESSION 1: BIOMARKERS OF PHYSIOLOGIC STRESS (MODERATOR-ELIZABETH BURGESS)**

- 1) Non-invasive monitoring of stress-indicating hormone in mugger crocodile (*Crocodylus palustris*) across diverse habitats: validation of fecal glucocorticoid assay for application in a free-ranging population. Brinky Desai, Ahmedabad University
- 2) Fencing for conservation: physiological and demographic responses to barriers to dispersal in an African elephant (*Loxodonta africana*) population. Jacqueline Morrison, Manchester Metropolitan University and Chester Zoo
- 3) Physiological response after translocation differs between source population types in a threatened mammal. Kelly Williams-Kelly, La Trobe University

1115 – NOON **SESSION 2: INTEGRATIVE ANIMAL HEALTH (MODERATOR-RATNA GHOSAL)**

- 4) Feather corticosterone as an indicator of feather condition and experiences during molt of zoo-housed crested penguins (*Eudiptes* spp.). Grace Fuller, Detroit Zoological Society
- 5) Hormonal variation and temporal dynamics of musth in zoo-housed Asian elephants (*Elephas maximus*) are associated with age, body condition, and the social environment. Kathleen Hunt, George Mason University and Smithsonian-Mason School of Conservation
- 6) Integrative animal welfare: combining behavioral endocrinology with ecotoxicology. Andrea Webster, University of Pretoria

NOON – 1PM **PLENARY TALK: DR. MARIA THAKER – INDIAN INSTITUTE OF SCIENCE, BANGALORE, INDIA. “STRESS, SEX AND DANGER: THE BEHAVIOURAL ENDOCRINOLOGY OF LIZARDS IN A CHALLENGING WORLD”**

- 1pm – 2pm Lunch

2PM – 3PM

**SESSION 3: REPRODUCTIVE FUNCTION
(MODERATOR-TINA CHIARELLI)**

- 7) Using reproductive hormonal, physiological, and behavioral indicators to inform on breeding in the black-footed ferret (*Mustela nigripes*). Emily Potratz, University of Illinois at Chicago
- 8) Reconstructing glucocorticoid and reproductive history of critically endangered Rice's whales using baleen. Rebecca Evey, George Mason University
- 9) AKR1D1 and CYP21A2 – Hidden players in steroid metabolism of corpora lutea of felids? Beate Braun, Leibniz Institute for Zoo and Wildlife Research
- 10) A new insight into southern right whale reproduction via baleen endocrine and stable isotope analysis. Loraine Shuttleworth, University of Pretoria

300 – 315

Break

315 – 430PM

**SESSION 4: LONG-TERM STUDIES OF WILDLIFE
(MODERATOR- GOVINDHASWAMY UMAPATHY)**

- 11) New paradigm in tiger conservation: landscape-scale physiological correlates of various natural and anthropogenic factors across Terai-Arc landscape, India. Shiv Patel, Wildlife Institute of India
- 12) Longitudinal adrenal, reproductive, and thyroid hormone profiles from four 1960's bowhead whales. Jen Jelincic, George Mason University
- 13) Profiling the hidden whales of the Smithsonian: longitudinal hormone analyses of Antarctic baleen whales from the WWII era. Allison Case, George Mason University
- 14) The lion's share of the lions' hair: insights into free-ranging lion stress and reproductive physiology using hair hormone analysis. Katherine Fowler, University of Illinois at Chicago
- 15) The cost of sympatry: spatio-temporal patterns in leopard dietary and physiological responses to tiger competition gradient in Rajaji Tiger Reserve, Uttarakhand, India. Samrat Mondol, Wildlife Institute of India

5pm – 630pm

MENTOR-MENTEE TRIVIA NIGHT – Koshy Deck (with high tea)

10AM – 11AM SESSION 5: REPRODUCTIVE FUNCTION

(MODERATOR-BRINKY DESAI AND JOHN O'HANLON)

- 16) Non-invasive quantification of reproductive hormone metabolites after a gonadotrophin-releasing hormone administration in the naked mole-rat (*Heterocephalus glaber*). Tshepiso Majelantle, University of Pretoria
- 17) Characterization of basic reproductive biology in Amur leopards (*Panthera pardus orientalis*) using non-invasive monitoring. Amy Miller, Cincinnati Zoo and Botanical Gardens
- 18) How suppressed is suppressed? Long-term application of progestin as a contraceptive in giraffe. Rebecca Mogey, Chester Zoo
- 19) Development of a 3D cell culture system to investigate mechanisms regulating corpus luteum functionality in felids. Michal Mateusz Hryciuk, Leibniz Institute for Zoo and Wildlife Research

11AM – NOON SESSION 6: NEW TECHNIQUES FOR APPLIED ENDOCRINOLOGY (MODERATOR-KATHLEEN HUNT)

- 20) Lipid content and hormones: how to get the most out of a single extraction. Valentina Melica, Fisheries and Oceans Canada
- 21) Selecting your solvent: could it change your results? Maeve O'Keeffe, La Trobe University
- 22) An efficient way to evaluate multiple biomarkers in serum samples. Elizabeth Donelan, Cincinnati Zoo and Botanical Garden
- 23) Validating a fecal DNA damage assay via comparison to glucocorticoid metabolites in captive wildlife. Emily Bovee, Detroit Zoological Society

Noon – 1pm Poster Session A (odd numbers)

1pm – 2pm Lunch

2PM – 3PM SESSION 7: MISCELLANEOUS

(MODERATOR-ANDREA WEBSTER AND VALENTINA MELICA)

- 24) Does wildlife friendly lighting have a physiological cost? Investigating the impacts of LED lighting on melatonin and glucocorticoid expression in nocturnal mammals. Alicia Dimovski, La Trobe University
- 25) The role of mesotocin in regulating social behavior in Siberian jays: insights from a wild population. Saverio Lubrano, University of Konstanz and Max Planck Institute
- 26) Alterations in faecal glucocorticoid metabolite concentrations post-defaecation across three animal feeding classes (ruminants, hindgut fermenters and carnivores). Andre Ganswindt, University of Pretoria

- 27) An attempt to evaluate the physiology of wild snow leopards using fecal steroid hormone analysis. Kodzue Kinoshita, Kyoto University

**3PM – 345 SESSION 8: BIOMARKERS OF PHYSIOLOGIC STRESS
(MODERATOR-SAMRAT MONDOL)**

- 28) Expression of glucocorticoids across the ovarian cycle in the critically endangered mountain pygmy-possum. Kerry Fanson, La Trobe University
- 29) Adreno-immunological response in rehabilitation processes of ex-situ in Tropical screech owl (*Megascops choliba*). Heriberto Barbosa-Moyano, Universidade de São Paulo
- 30) Physiologically plastic elephants: highly dynamic glucocorticoid responses in African and Asian elephants. Sanjeeta Sharma Pokharel, Kyoto University

530 – 630PM LOCAL PLENARY TALK: DR. SAMIR SINHA – INDIAN FOREST SERVICE, UTTARAKHAND CADRE. “CONSERVATION EFFORTS AND MANAGEMENT CHALLENGES OF CORBETT TIGER RESERVE”

- 630 – 9pm Cocktail hour and local Kumauni dance performance
- 9pm – 11pm Conference dinner

THURSDAY NOVEMBER 9TH

- 930 – 10am Updates from the ISWE Board

**10AM – NOON BEST PRACTICES GUIDELINES WORKSHOP
LEAD BY DRS. KATIE EDWARDS, KERRY FANSON ET AL.**

NOON – 1PM PLENARY TALK: DR. JANINE BROWN – SMITHSONIAN NATIONAL ZOO AND CONSERVATION BIOLOGY INSTITUTE, WASHINGTON DC, USA. “A BRIEF HISTORY OF WILDLIFE ENDOCRINOLOGY AND ISWE: A PERSONAL PERSPECTIVE OF LESSONS LEARNED”

- 1pm – 2pm Lunch
- 2pm – 3pm Poster Session B (even numbers)

**3PM – 345 SESSION 9: NEW TECHNIQUES FOR APPLIED ENDOCRINOLOGY
(MODERATOR-BETH ROBERTS)**

- 31) Development and validation of a steroidomics methodology for non-invasive biomonitoring in wildlife. Tom Cools, Ghent University and Leibniz Institute for Zoo and Wildlife Research
- 32) Preliminary use of urinary NIRS for early pregnancy detection in giant pandas. Kirsten Wilson, University of Edinburgh

- 33) Record-breaking mortality of Florida manatees: can fecal hormone assessment help provide early warnings of population consequences?
Elizabeth Burgess, New England Aquarium

345 – 4pm Break

**4PM – 515 SESSION 10: REPRODUCTIVE FUNCTION
(MODERATOR-TSHEPISO MAJELANTLE AND ALLIE CASE)**

- 34) All eggs in one poor quality basket: assessing Hawaiian green sea turtle (honu) resilience in light of climate change impacts. Camryn Allen, Pacific Islands Fisheries Science Center/NMFS/NOAA
- 35) Faecal androgen metabolites exhibit predictable fluctuations across the ovarian cycle in Tasmanian devils (*Sarcophilus harrisii*). Hannah Roberts, La Trobe University
- 36) Characterization of 13,14-dihydro-15-keto-prostaglandin f2-alpha metabolite (PGFM) in the sand cat (*Felis margarita*) and Pallas' cat (*Otocolobus manul*) as a non-invasive marker for pregnancy resulting from natural breeding or artificial insemination. Lindsey Vansandt, Cincinnati Zoo and Botanical Garden
- 37) Non-invasive reproductive monitoring helps in successful breeding of mouse deer (*Moschiola indica*) in captivity. Vinod Kumar, Centre for Cellular and Molecular Biology
- 38) Validation of non-invasive hormone analysis techniques to assist in the identification of maternal roosts of ghost bats (*Macroderma gigas*). Tamara Keeley, University of Queensland

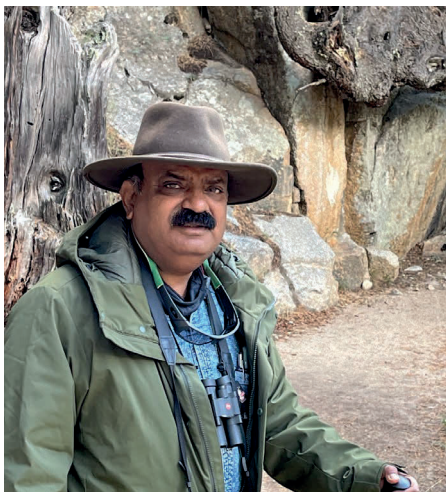
515 – 6pm Closing remarks

PLENARY SPEAKERS



DR. MARIA THAKER

Maria Thaker is an Associate Professor at the Centre for Ecological Sciences, Indian Institute of Science, Bangalore India. Her lab takes an integrative and comparative approach to understand phenotypic form and function, especially in lizards. This involves exploring multi-trait variation within and between species, the functional connection between morphology, behaviour, physiology, and nutrition, as well as the evolutionary patterns of these trait complexes. Her lab is particularly interested in understanding the implications of environmental change, such as urbanization, and climate change, on such animal responses. Most recently, her lab is focused on how fear, foraging, and sex is modulated by stress.



DR. SAMIR SINHA

Samir Sinha is a member of the Uttarakhand Cadre of the Indian Forest Service (IFS). Currently he is the Principal Chief Conservator of Forests (Wildlife). And Chief Wildlife Warden for the state of Uttarakhand. He has over 30 years of experience in Natural Resources and Wildlife Management, and he has served as the former Directors of Corbett Tiger Reserve, Rajaji Tiger Reserve and Nanda Devi Biosphere Reserve. He has also served as the Former Head of TRAFFIC India. He was a Fulbright Nehru Fellow and received his PhD in Wildlife Science. He has helped establish and operationalize the South Asian Wildlife Enforcement Network (SAWEN) for strengthening regional cooperation for wildlife enforcement. He brings a unique combination of science-based conservation and management leading to effective wildlife policy and law. He has forged strong collaborations with various government and non-government organizations to deal with human-wildlife conflict in Uttarakhand.



DR. JANINE BROWN

Dr. Janine Brown is a wildlife endocrinologist devoted to better understanding the biology of wildlife species and factors that affect reproduction, welfare, and health. She is currently Head of the Endocrine Research Laboratory at the Smithsonian Conservation Biology Institute (SCBI) and has trained and/or mentored over 100 fellows, students, and interns both in the U.S. and abroad in basic and applied research methods, specifically in the areas of endocrinology and theriogenology. Research efforts are connected to the scientific disciplines of behavior,

endocrinology, and stress management, with a special emphasis on elephants, where she plays a key role in ex situ management of both species in the U.S., and Asian elephants in range countries. With over 35 years of experience in wildlife endocrinology, Dr. Janine Brown saw firsthand how hormone monitoring grew to become an integral part of conservation physiology science. She was an early adopter of noninvasive techniques to measure hormones in urine, feces, hair, and saliva, resulting in the largest wildlife endocrine database, and training of dozens of students/visiting scientists. To further promote the field, she co-founded ISWE in 2011 to bring specialists together from around the globe to share endocrine experiences. Through examples from three plus decades of work, she will present a brief history of wildlife endocrinology and the genesis of ISWE.

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POSTER PRESENTATIONS

REPRODUCTIVE FUNCTION

- 1) Utilising routine non-invasive faecal samples for the detection of oestrus and early gestation in okapi (*Okapi johnstoni*). John O'Hanlon, Chester Zoo
- 2) Successful pairing, monitoring, and pregnancy detection of large spotted genet (*Genetta tigrina*). Beth Roberts, Memphis Zoo
- 3) Longitudinal analysis of reproductive and adrenal hormones in Bontebok (*Damaliscus pygargus*): a case study of social changes and reproductive events. Candace Scarlata, Oregon Zoo
- 4) Assessing reproductive hormones in adult female blue whales (*Balaenoptera musculus*) by analyzing historic baleen samples from the 1940's. Nadia Gray, George Mason University
- 5) Calving intervals inferred from progesterone patterns in historic baleen of female fin whales (*Balaenoptera physalus*). Piper Thacher, George Mason University
- 6) Changes in testicular histophysiology and immuno-intensity of androgen receptor in brown bear (*Ursus arctos*) in association with age, season, and spermatogenic score. Ghulam Nabi, Polish Academy of Sciences
- 7) Understanding context and endocrine correlates of aggressive behavior in female mugger crocodiles during reproductive and non-reproductive phases. Tathagata Bhowmik, Ahmedabad University

BIOMARKERS OF PHYSIOLOGIC STRESS

- 8) Glucocorticoids as potential biomarkers of stress in sei whale (*Balaenoptera borealis*) baleen. Daniela Mello, University of São Paulo and Northern Arizona University
- 9) Human activity and wildlife tourism: significant contributors to elevated glucocorticoid levels in *Panthera tigris tigris* (Tiger) in India. Gudimella Anusha, CSIR CCMB
- 10) Stress in the Anthropocene: the complex relationship between physiological stress and anthropogenic food consumption in sika deer. Tatsuki Shimamoto, Nippon Veterinary and Life Science University
- 11) Development of an ISWE 11-oxoaetiocholanolone mini-kit for the non-invasive quantification of glucocorticoid metabolites in feces. Katie Edwards, Chester Zoo
- 12) Quantifying corticosterone in bird feathers to assess chronic stress levels in avian populations inhabiting eastern Himalayan forests. Kaling Danggen, Indian Institute of Science

- 13) Scale hormone concentrations as a non-lethal biomonitoring tool to assess longterm stress and endocrine disruption. David Janz, University of Saskatchewan

LONG-TERM STUDIES OF WILDLIFE

- 14) Behavioral and endocrine correlates in a reintroduced population of swift foxes (*Vulpes velox*). Kimberly Todd, George Mason University and Smithsonian's National Zoo and Conservation Biology Institute
- 15) Decadal bowhead whale baleen stable isotope and hormone chronologies (1985–2011) reflect Arctic ecosystem shifts. Cory Matthews, Fisheries and Oceans Canada
- 16) Habitat-dependent foraging behaviour of Nilgiri langurs (*Semnopithecus johni*) and their stress status in the Nilgiris: a comparative preliminary study. Sukesh Bhupathy, Indian Institute of Science

INTEGRATIVE ANIMAL HEALTH

- 17) A change of heart: seasonal trends in heart rate and hair thyroid hormones in maned wolves (*Chrysocyon brachyurus*). Jane Braswell, George Mason University and Smithsonian National Zoo and Conservation Biology Institute

MISCELLANEOUS

- 18) Studying hormones in one of the most elusive, deepest-diving species on the planet, Blainville's beaked whales (*Mesoplodon densirostris*). Danielle Dillon, New England Aquarium

