

## Dr. Patrick O. Onyango

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### EDUCATION

Princeton University, PhD 2011  
University of Nairobi, MSc 2005  
Kenyatta University, B.Ed. Science (First Class honors) 2000

### RESEARCH EXPERIENCE

**Research interests:** My previous research focused on behavioural physiology and biodiversity conservation. Currently, I am interested in human and wildlife health consequences of exposure to antibiotics and endocrine disrupting chemicals.

**2015-2018: PI**— Stress hormones profiles and genetic viability of a recently translocated population of the critically endangered black rhinoceros (*Diceros bicornis michaeli*) in Kenya. Project funded by The World Academy of Sciences.

**2011- 2013: Research Scientist**—Research on the social, ecology, and physiology of large mammals. In addition, I also managed the Amboseli Baboon Research Project database.

**December 2002 –October 2005: Research Assistant**—Non-invasive endocrine techniques. Chiromo Campus, University of Nairobi, the Amboseli baboon Research Project.

**March – June 2004: Research Intern**—Non-invasive methods in endocrinology. Prof. Jeanne Altmann Endocrine Laboratory, Princeton University.

**July 2001 – October 2002: Principal Investigator**—Demography of an elephant population with a long-history of poaching. Affiliated to Save the Elephants and Kenya Wildlife Service.

**February – July 2001: Research Scientist**—Pre-translocation monitoring of elephants. Affiliated to Kenya Wildlife Service and Save the Elephants

**January 2001: Research Associate**—Evaluation of forest and non-human primate census. Joint project by the Institute of Primate Research and Kenya Wildlife Service

**January 2001: Research Intern**—Completed training on the study of elephants in Amboseli National Park. Training was organized and facilitated by the African Wildlife Foundation.

**November 1999 – January 2001: Research Scientist**—Biodiversity assessment and indigenous knowledge evaluation in Mfangano Island, Lake Victoria

### TEACHING EXPERIENCE

**July 2013-present: Lecturer**—Department of Zoology, Maseno University.

*September 2016: **Lecturer***—School of Public Health and Community Development, Maseno University.

*January 2006 – May 2011: **Teaching Assistant***—Department of Ecology and Evolutionary Biology, Princeton University.

*July 2013-present: **Mentor***—Supervised 16 graduate students to successful completion.

*September 2011-May 2012: **Research Mentor***—Co-supervised with Dr. Susan Alberts three Independent Study students, Department of Biology, Duke University, USA.

## **HONORS AND AWARDS**

2017: The National Research Fund to the sum of KES. 20,000,000; Co-PI in collaboration with Prof. Collins Ouma

2015: The World Academy of Sciences to the sum of US \$; 50,999; PI

2012: Travel award, National Institute of Health, USA

2009: Travel award, German Primate Centre, Germany

2009: The National Science Foundation Doctoral Dissertation Improvement Grant

2008: Mwangaza Research Award – funded proposal

2006: Outstanding Poster Award, Princeton Research Symposium

2001: Elephant Research Trust Fund

2001: Save the Elephants and Kenya Wildlife Service

## **PROFESSIONAL MEMBERSHIP**

Society for Conservation Biology

African Society for Conservation Biology

International Primatological Society

## **SKILLS AND TRAINING**

Good knowledge of statistical programs such as SPSS and R

Good knowledge of database management using Short Query Language

## **LEADERSHIP EXPERIENCE**

2017-Present: Associate Dean, School of Graduate Studies, Maseno University

2015 – 2017: Departmental Examination Coordinator, Department of Zoology, Maseno University.

2013-present: Coordinator, Program in Conservation Biology & Undergraduate Independent Study

2008-2011: Certified Firefighter, volunteer officer, Princeton Borough, New Jersey

2011-Present: Reviewer for several journals including Hormones & Behavior, American Journal of Physical Anthropology, Ethology, and African Journal of Ecology.

## **CONFERENCES AND WORKSHOPS**

**Guest lecturer**, 2012: Gave a 50-minute lecture on Dispersal as part of Biology 267, Evolution of Animal Behavior taught by Dr. Susan C. Alberts, Department of Biology, Duke University, USA.

**Onyango, P.O.** 2010. Challenges facing transboundary conservation of the African elephant. Talk presented to a general audience from Princeton University community, USA.

**Onyango, P.O.** 2010. Season and female fertility but not opportunities for paternal care predict intensity of mate guarding in baboons. Talk presented at the Department of Ecology and Evolutionary Biology.

**Onyango, P.O.**, Alberts, S.C., Altmann, J. 2010. Season and female fertility but not opportunities for paternal care predict intensity of mate guarding in baboons. Talk at the 47<sup>th</sup> Animal Behavior Conference, July 25 -30 2010, College of William and Mary, Virginia, USA.

**Onyango, P.O.** 2010. Balance of investment between offspring production and care in the non-monogamous savanna baboon. Poster presentation at Graduate Prospective Students' Symposium at the Department of Ecology and Evolutionary Biology, Princeton University.

**Onyango, P.O.** 2009. Balance of investment between offspring production and care in male savanna baboons. Invited talk given at the 7<sup>th</sup> Göttinger Freilandtage Conference on Long-term field studies of Primates December 8 - 11 2009, Göttingen, Germany.

**Onyango, P.O.** 2008. Looking at disease beyond the usual culprits: role of trans-generational effects. Invited lecture at the University of Nairobi.

**Onyango, P.O.** 2008. Intergenerational Effects: A New way of looking at disease? Invited lecture at the Institute of Primate Research, National Museums of Kenya.

**Onyango, P.O.** 2008. Development of health and disease. Talk presented to a general audience from Princeton University community.

**Onyango, P.O.**, Gesquiere, L.R., Wango, E.O., Alberts, S.C., Altmann, J. 2006. Hormonal Correlates of Natal Dispersal in Baboons: effects of maternal characteristics and male status. Poster presented at the 21st Congress of the International Primatological Society, June 25 – 30, 2006, Entebbe, Uganda, East Africa.

**Onyango, P.O.**, Gesquiere, L.R., Wango, E.O., Alberts, S.C., Altmann, J. 2006. Effects of maternal and individual characteristics on glucocorticoid concentrations of sub-adult male baboons. Poster presented at the Animal Behavior Society, 43<sup>rd</sup> Annual Conference, August 12-16 2006, Snowbird Resort, Utah, USA.

**Onyango, P.O.** 2006. Persistence of maternal effects in baboons: dominance rank of mother at son's conception predict stress hormone levels in sub-adult males. Poster presented to a general audience at the 2006 Princeton University Research Symposium.

## PUBLICATIONS

Oginah, A.S., **Onyango, P.O.** 2020. Trace metals as a possible mediator of roan antelope (*Hippotragus equinus langheldi*) population decline in Ruma National Park, Kenya. *African Journal of Ecology*, DOI: 10.1111/aje.12744

Kipkorir, C.K., Ang'ienda, O.P., Onyango, D.M., **Onyango, P.O.** 2020. Antibiotic resistance of *Escherichia coli* from humans and black rhinoceros in Kenya. *EcoHealth* 17 (1), 41-51

Ong'wen, F., **Onyango, P.O.**, Bukhari, T. 2020. Direct and indirect effects of predation and parasitism on the *Anopheles gambiae* mosquito. *Parasites & Vectors* 13 (1), 1-11

Aricha, S.A., Kingwana, L., Mwirigi, N.W., Chaba, L., Kiptai, T., Wahogo, J., Otware, J.S., **Onyango, P.O.**, Karanja, M., Ayieko, C., Matu, S.W. 2019 Comparison of GeneXpert and line probe assay for detection of *Mycobacterium tuberculosis* and rifampicin-mono resistance at the National Tuberculosis Reference Laboratory, Kenya. *BMC Infectious Diseases* 19 (852)

Oginah, A.S., Ang'ienda, P.O., **Onyango, P.O.** 2019. Evaluation of habitat use and ecological carrying capacity for the reintroduced Eastern black rhinoceros (*Diceros bicornis michaeli*) in Ruma National Park, Kenya. *African Journal of Ecology*, DOI: 10.1111/aje.12674

Muruka, C., Ogendi, J., **Onyango, O. P.** 2019. Assessment of the effect of the free maternity programme on maternal and newborn health in Gem Sub-County, western Kenya. *Journal of Health Care for the Poor and Underserved* 30, 1132-1150

Olesikamoi, P., **Onyango, P.O.**, Odero, W. 2019. Prescription knowledge among patients with cardiovascular diseases at the Moi Teaching and Referral Hospital, Kenya. *International Journal of Pharmaceutical Sciences and Research* 10(2): 769-774

Akinyi, M.A, Gesquiere, L.R., Franz, M., **Onyango, P.O.**, Altmann, J., Alberts, S.C. 2017. Hormonal correlates of natal dispersal and rank attainment in wild male baboons. *Hormones and Behavior* 94, 153-161.

Kebenei, C. K., Bett, P. K., **Onyango, P.O.**, Onyango, D.M., Ayieko, C., Angienda, O.P. 2016. Antimicrobial resistance patterns, genetic basis and prevalence of pathogenic *Escherichia coli* circulating within Trans-Nzoia County, Kenya. *Journal of Microbiology and Infectious Diseases*, 6, 107-112.

**Onyango, P.O.**, Lesowapir, B. 2016. Demography of a population with a long history of poaching and the utility of the individual identification technique as a tool for monitoring intermittently studied elephant populations. *African Journal of Ecology*, 53, 357-364.

**Onyango, P.O.**, Gesquiere, L.R., Altmann, J., Alberts, S.C. 2013. Puberty and dispersal in a wild primate population. *Hormones and Behavior*, 64: 240–249.

**Onyango, P.O.**, Gesquiere, L.R., Altmann, J., Alberts, S.C. 2013. Testosterone positively associated with mating effort and paternal investment in savanna baboons (*Papio cynocephalus*). *Hormones and Behavior*, 63: 430 - 436.

Gesquiere, L.R., Learn, N.H., Simao, C.M., **Onyango, P.O.**, Alberts, S.C., Altmann, J. 2011. Life at the top: rank and stress in wild male baboons. *Science* 333: 357-360.

Altmann, J., Gesquiere, L.R., Galbany, J., **Onyango, P.O.**, Alberts, S.C. 2010. The life history context of reproductive aging in a wild primate model. *Annals of the New York Academy of Science* 1204: 127-138.

Gesquiere, L.R., **Onyango, P.O.**, Alberts, S.C., Altmann, J. 2011. Endocrinology of year-round reproduction in a highly seasonal habitat: environmental variability in testosterone and glucocorticoids

in baboon males. *American Journal of Physical Anthropology* 144: 169-176.

**Onyango, P.O.**, Gesquiere, L.R., Wango, E.O., Alberts, S.C., Altmann, J. 2008. Persistence of maternal effects in baboons: mother's dominance rank at a son's conception predicts stress hormone levels in sub-adult males. *Hormones and Behavior* 54: 319-324.

**Ogola, P.O.**, Omondi, O.P. 2005. Demography of a confined elephant population and the potential consequences of translocation: the case of Sweetwaters Game Reserve, Kenya. *Pachyderm* 39, 57-62.

Gesquiere, L.R., Altmann, J., Khan, M.Z., Couret, J., Yu, J.C., Endres, C.S., Lynch, J.W., **Ogola, P.**, Fox, E.A., Alberts, S.C., Wango, E.O. 2005. Coming of age: steroid hormones of wild immature baboons, *Papio cynocephalus*. *American Journal of Primatology* 67, 83-100.

Ogol, C.K.P.O., **Ogola, P.O.**, Khayota, B. 2004. Sacred groves (kibaga) and other special trees of Mfangano island, Lake Victoria, Kenya. *East African Journal of Science* 5, 49-58.

**Ogola, P.O.** 2003. Demographic status of the Meru elephant population. Final report to the Elephant Research Trust Fund/Kenya Wildlife Service and Save the Elephants. Technical Report to the Kenya Wildlife Service.

Omondi, P., Wambwa, E., Gakuya, F., Bitok, E., Ndeere, D., Manyibe, T., **Ogola, P.O.**, Kanyingi, J. 2002. Recent translocation of elephant family units from Sweetwaters Rhino Sanctuary to Meru National Park, Kenya. *Pachyderm* 32, 39-48.

Ogol, C.K.P.O., **Ogola, P.O.**, Odede, W.D., Khayota, B. 2002. Indigenous knowledge of medicinal and utilitarian plants of Mfangano Island, Lake Victoria, Kenya. *East African Journal of Science* 4, 11-28.