

APPLICATION FOR SMALL GRANT FELLOWSHIP TO ZOO

1. GENERAL INFORMATION

Date of application : 11-01-2007

Name of the zoo : Arignar Anna Zoological Park,
Vandalur, Chennai-800 048

Contact person / project leader

**Shri. P.L. Ananthaswamy, I.F.S., Chief Conservator of Forest &
Director, Arignar Anna Zoological Park, Vandalur, Chennai-48**

2 CLASSIFICATION OF PROPOSAL

Under "SCIENTIFIC MANAGEMENT"

**POPULATION CONTROL MEASURES OF PROLIFICALLY BREEDING
ANIMALS IN ARIGNAR ANNA ZOOLOGICAL PARK**

3. DATE OF INITIATION OF THE PROJECT

**Thirty days from the date of receipt of the funds from Central Zoo
Authority of India**

4. DURATION OF THE PROJECT

Three years

5. LOCATION OF THE PROJECT

Region / State : Tamilnadu state

Closest main city : Chennai

6. STAFF INVOLVED IN PROJECT

1. Name(+ title) + Zoo / Organization

Shri. P.L. Ananthaswamy, I.F.S., Chief Conservator of Forest & Director, Arignar Anna Zoological Park, Vandalur, Chennai-48

Period to be spent on the project: from: date of start to: three years (for ten hours in a week)

Role / Function in the project

Framing of management procedures for the successful ongoing of Proposed project activities and assisting in the framing of Management related Guidelines on Population control measures of prolifically breeding animals in Arignar Anna Zoological Park

2. Name(+ title) + Zoo / Organization

Dr.K.Senthilkumar, M.V.Sc., Veterinary Assistant Surgeon, Arignar Anna Zoological Park, Vandalur, Chennai-48

Period to be spent on the project: from: date of start to: three years for ten hours in a week

Role / Function in the project

Application of intervention techniques for control of benefits of reproduction in the selected wild animal species and assisting in ethological and health assessment related works.

3. Name(+ title) + Zoo / Organization

Dr.M.G.Jayathangaraj, Ph.D., Professor and Head, Department of Wildlife Science, Madras Veterinary College, Chennai-7

Period to be spent on the project: from: date of start to: three years for six hours in a week

Role / Function in the project

Health assessment related works and Hormonal analysis and correlation of results and assisting in the manual preparations..

7. PROJECT PERSONNEL

7a. Background and history of the project

In the previous years, assessment of hormone levels were carried out in case of tigers in collaboration with Department of Wildlife Science at Madras Veterinary College with regard to throwing of more light in the reproductive profile of this prestigious species of this country. Further, Arignar Anna Zoological Park has associated with the estimation of hormone assessment like cortisol in chimpanzees etc. Surgical interventions were earlier carried out to curtail the population of few wild animal species in an isolated manner as preliminary study. Additionally, the Arignar Anna Zoological Park has been involving in Lion tailed macaque related breeding project, sponsored by Central Zoo Authority of India.

7b. Main problem or question

The zoological parks or zoos are currently having an emerging need of adaptation of suitable population control measures of prolifically breeding animals as the case with Spotted deer, Sambar deer, blackbuck, reptiles like marsh crocodiles and carnivores like lions. By nature, the numbers of these wild animal species are increasing in every few months, thus posing management related crisis at this zoological park, which is catering multiple species of wild fauna. Due to the increase in number of animals, the cost factor pertaining to the maintenance of these wild animal species also goes up in a zoological park set up, thus adding up the hardships to the park management, in a serious manner. All these necessitate the need of scientifically framed population control measures in case of prolifically breeding wild fauna in the zoos. Considering the extent of emerging crisis, this has to be addressed on war-foot basis.

7c. Aims and objectives of the project

Aims

- Arriving at suitable population control measures of prolifically breeding animals in Arignar Anna Zoological Park by intervention techniques

Objectives

1. Application of surgical techniques in both male and females of selected wild animal species (Spotted deer, Sambar deer, Blackbucks, Marsh crocodiles and Lions) and preparation of CD on the techniques

2. Assessment of health related parameters including the hormonal status pertaining to reproduction and stress

3. Preparation of manuals on "Population control measures of prolifically breeding animals in Arignar Anna Zoological Park".

7d. Methodology and / or proposed activities

Activity	Technique to be applied
Intervention techniques, Observations and CD preparation	Subsequent to the chemical restraint, intervention techniques like tubectomy, vasectomy will be applied in wild animal species like Spotted deer, Sambar deer, Blackbucks, Marsh crocodiles and Lion. The procedures will be carried out in an aseptic manner and undue stress will be avoided to a greater extent to the captive wild animal species, selected for the study. Video will be taken and CD will be prepared. Observation of behaviour pertaining to the reproduction will be carried out both prior and after the intervention techniques.
Health assessment including the hormonal assessment	Hematological parameters like hematocrit value, RBC, WBC, ESR, Haemoglobin and biochemical values like serum glucose, AST, ALT, serum total protein, serum albumin, serum globulin, A/G ratio, cholesterol, BUN, Creatinine and hormones like testosterone, oestrogen, cortisol will be estimated using appropriate techniques (Calorimetry/Spectrophotometry, Radioimmuno Assay technique and standard laboratory techniques.)
Manual preparation	Data will be correlated, analyzed scientifically and based on the findings in this study, manual will be prepared on "Population control measures of prolifically breeding animals in Arignar Anna Zoological Park".

8. COLLABORATION

NAME OF INSTITUTION

Department of Wildlife Science, Madras Veterinary College (Background information about this department is being furnished in appendix)

LOCATION

Dept. of Wildlife Science, Madras Veterinary College, Vepery, Chennai- 7

UNIVERSITY

**TAMILNADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY,
Madhavaram Milk Colony, Madhavaram, Chennai-600 051**

TYPE OF COLLABORATION

For assessment of health related parameters including the hormone status and assistance in the concerned manual preparations

SUPPORT

- Rs. 1.8 lakhs will be provided to the collaborating institution (Madras Veterinary College of TAMILNADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY) for carrying out the health assessment works, including the hormonal status assessment and this has been revealed in budgetary provision.
- Fund has to be provided in favor of FINANCE OFFICER, TANUVAS, CHENNAI-51

9. BASIC TIME SCHEDULE

Three years from the date of receipt of funds from Central Zoo Authority of India

YEAR	ACTIVITY
First year	<ul style="list-style-type: none"> □ Males and females of one species (Marsh crocodiles) will be taken up for study; Surgical intervention, ethological study; health assessment works; documentation works
Second year	<ul style="list-style-type: none"> □ Males and females of two species (Spotted deer and Sambar deer) will be taken up for study. Surgical intervention, ethological study; health assessment works; documentation works
Third year	<ul style="list-style-type: none"> □ Males and females of two species (Blackbucks and lions) will be taken up for study and report preparation, in addition to the manual preparations. Surgical intervention, ethological study; health assessment works; documentation works

10.a. Description on the support that can be expected from this project

Followings are the outputs that can be anticipated in this project:

- Electronic guide on Intervention Techniques to curtail the benefits of reproduction in wild animal species.
- Manual entitled "Population control measures of prolifically breeding wild animals at the Zoo level"
- Publications will be made in addition to specific reports which will be of useful to all zoo veterinarians

10.b. Relevance of this project for ex-situ conservation and scientific management of animals in general

This project will be tremendously useful for the Zoo manager of this zoological park or as a matter of fact for any curator of the zoo, zoological garden etc. in finding out the suitable scientific methods that are cost effective when dealing with the concerned wild animal species and the problems if faced will be revealed in details.

The pros and cons of the project work will be analyzed in a scientific manner and hence, the solutions can be arrived in an effective manner towards the scientific management of the species like spotted deer, sambar deer, blackbucks, marsh crocodiles and lions.

10.c. Evaluation of results

□ First year:

One species can be evaluated in terms of behaviour and appearance due to surgical intervention techniques at year-end.

□ Second year and third year

Similar evaluation can be carried out for rest of the species at end of both second and third years.

12. FINANCIAL ASPECTS

**Six lakhs and seventy five thousands only
(Rs.6,75,000/-)**

(Details are enclosed in the Appendix I)

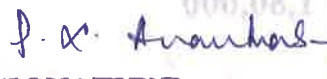
12. a. Source is already guaranteed by Central Zoo Authority of India

12. b. Name : Arignar Anna Zoological Park, Vandalur, Chennai-600 051

13. DECLARATION

The information submitted in this application is true to the best of my knowledge. Should any significant developments arise after this application is made,

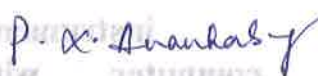
I shall notify the Member Secretary, Central Zoo Authority


SIGNATURE
Chief Conservator of Forests
and Director
Arignar Anna Zoological Park
Vandalur, Chennai-48

Director of the
Arignar Anna Zoological
Park, Vandalur,
Chennai-600 048


Signature

Research Project Leader Chief Wildlife Warden


Signature


Signature
Principal Chief Conservator of Forests
and

Date 11-01-2007
Chief Conservator of Forests
and Director
Seal
Arignar Anna Zoological Park
Vandalur, Chennai-48

Date 11-01-2007
Chief Conservator of Forests
and Director
Seal
Arignar Anna Zoological Park
Vandalur, Chennai-48

Date
Chief Wildlife Warden
Chennai-600 015.
Seal
12.1.07

S.NO.	DETAILS (HEAD WISE)	AMOUNT
1	RECURRING	5,80,000/-
2	NON - RECURRING	95,000/-
3	TOTAL	6,75,000/-

APPENDIX I

FINANCIAL OVERVIEW

S.NO.	DETAILS	AMOUNT IN RS.
	Recurring	
1.	JRF @ Rs.8800 per month for 3 years	3,16,800
2.	Consumables at Zoo level (darts, drugs, medicaments, and contingencies)	60,200
3.	CD preparation	10,000
4.	Manual preparation	8000
5.	Report preparation	5000
6.	Fee for collaborating institute (To be utilized by collaborating institute towards the procurement of kits, consumables for health assessment works, hormone kit procurement, travel for zoo visits and contingencies required for project works)	1,80,000
7.	Non recurring	
	Haemostatic instrument, videohandycam, computer with support, scanner and printer	95,000

ABSTRACT

S.NO.	DETAILS (HEAD WISE)	AMOUNT
1	RECURRING	5,80,000 / -
2	NON - RECURRING	95,000 / -
3	TOTAL	6,75,000 / -

APPENDIX II**CURRICULUM VITAE OF THE APPLICANT AND INDIVIDUALS INVOLVED IN THE PROJECT****1. SHRI. P.L.ANANTHASAMY, CHIEF CONSERVATOR OF FOREST & DIRECTOR, ARIGNAR ANNA ZOOLOGICAL PARK, VANDALUR**

Joined in the Indian Forest Service in the year 1979 and had acquired M.Sc. (Agri.) from Bangalore Agricultural University and served in all forest protection services for the past twenty seven years

NAME	Shri. P.L.Ananthasamy
ADDRESS	Official Chief Conservator of Forests & Director, Arignar Anna Zoological Park, Vandalur, Chennai- 48 Res Staff quarters, Arignar Anna Zoological Park, Vandalur, Chennai-48
CONTACT MODE	Mobile: 9444264128 Email: aazp@vsnl.com

2. DR.K.SENTHILKUMAR (VETERINARY ASSISTANT SURGEON, ARIGNAR ANNA ZOOLOGICAL PARK, VANDALUR)

NAME	Dr.K.Senthilkumar, M.V.Sc.,
ADDRESS	Official Veterinary Assistant Surgeon, Arignar Anna Zoological Park, Vandalur, Chennai-48 Res No.E-4/16, First Main road, Otteri extension, Vandalur, Chennai -600048
CONTACT MODE	Mobile: 9444175982 Email: drsenthil72@hotmail.com

QUALIFICATIONS

DEGREES/DIPLOMA OBTAINED	INSTITUTION	YEAR & GRADES
B.V.Sc.	Tamilnadu Veterinary And Animal sciences University	1993 & 3.38 / 4.00
M.V.Sc.	Tamilnadu Veterinary And Animal Sciences University	2000 & 9.1 / 10.00

DETAILS OF POSITIONS

S.NO.	Name of post	Place where employed	Period
1	Veterinary Assistant Surgeon	Veterinary Dispensary, Thamarai pakkam	18-10-98 to 31-12-99
2	Veterinary Assistant Surgeon	Veterinary Dispensary, Magaral	1-1-2000 to 20-6-2001
3	Veterinary Assistant Surgeon	Arignar Zoological Park, Anna Park, Vandalur, Chennai	21-06-2001 onwards

MEMBERSHIPS

S.NO.	DETAILS
1	Registered Member of Tamilnadu Veterinary Council
2	Member of Indian Zoo veterinarians Association
3	Life Member in Indian Society for Veterinary Extension

BOOKS / MANUALS/ PUBLISHED

- Clinical anatomy of visceral organs in Tiger (Authors: M.G.Jayathangaraj, O.R.Sathyamoorthy, Geetha Ramesh, R. Vijayakumar, K.Senthilkumar, & Pathan Nazrullah khan.)**
- Clinical anatomy of visceral organs in Black buck (Authors: M.G.Jayathangaraj, O.R.Sathyamoorthy, B.Murali Manohar, K.Senthilkumar, & Pathan Nazrullah khan.)**
- Clinical anatomy of Liver in Sambar deer & Nilgai (Authors: M.G.Jayathangaraj, O.R.Sathyamoorthy, Geetha Ramesh, B.Murali Manohar, K.Senthilkumar, & Pathan Nazrullah khan.)**
- Clinical anatomy of visceral organs in Lion (Authors: M.G.Jayathangaraj, O.R.Sathyamoorthy, Geetha Ramesh, B.Murali Manohar, K.Senthilkumar, & Pathan Nazrullah khan)**
- Clinical anatomy of visceral organs in Panther (Authors: M.G.Jayathangaraj, O.R.Sathyamoorthy, Geetha Ramesh, B.Murali Manohar, K.Senthilkumar, & Pathan Nazrullah khan)**
- Glossaries in Wild Life – A Tamil Dictionary (Authors: M.G.Jayathangaraj, O.R.Sathyamoorthy, Geetha Ramesh, B.Murali Manohar, K.Senthilkumar, & Pathan Nazrullah khan)**
- Basic informative bulletin on Wild Felids (Authors: M.G.Jayathangaraj, O.R.Sathyamoorthy, Geetha Ramesh, B.Murali Manohar, K.Senthilkumar, & Pathan Nazrullah khan)**
- Glossaries in Wild Life. (Authors: M.G.Jayathangaraj, O.R.Sathyamoorthy, Geetha Ramesh, B.Murali Manohar, K.Senthilkumar, & Pathan Nazrullah khan)**

21. I. RESEARCH PAPER PUBLISHED

S.No.	TOPIC	Authors	JOURNAL
1	Immobilization of lions at Arignar Anna Zoological Park	K.Senthilkumar , M.G.Jayathangaraj and Pathan Nazrullah Khan	Intas Polivet Jun 2001
2	Immobilization of Bonnet and Rhesus Macaques at Arignar Anna Zoological Park	K.Senthilkumar , M.G.Jayathangaraj and Pathan Nazrullah Khan	Intas Polivet Jun 2001
3	Pododermatitis in an elephant calf	B.Murali manohar, J.Selvaraj, S.M.Sakthivelan, W.Manohar Paul, M.G.Jayathangaraj, K.Senthilkumar & A. Koteeswaran.	Indian Vet. J., Jan 2004
4	Amputation of tail in a palm civet <i>Viverricula indica</i> under xylazine and ketamine anaesthesia	R. Thirumurugan, K.Senthilkumar , and K.Devaki	Zoos' print Journal December 2004
5	A case of upper motor neuron affection in a rescued chimpanzee (<i>pan troglodytes</i>)	R.Thirumurugan, K.Senthilkumar , K.Devaki and Pathan Nazrullah Khan	Zoos' print Journal December 2004
6	A case of heat stroke in a lioness (<i>Panthera leo</i>)	R.Thirumurugan, K.Senthilkumar , K.Devaki and Pathan Nazrullah Khan	Zoos' print Journal , April 2005
7	Acariasis in an emu (<i>Dromaius novaellandiae</i>)- A case report	K.Senthilkumar , R.Thirumurugan, K.Devaki and Pathan Nazrullah Khan	Zoos' print Journal May 2005

8	Chemical immobilization of Grant's Zebra (<i>Equus burchelli boehmi</i>) for examination and treatment of lameness.	K.Senthilkumar , R.Thirumurugan and Pathan Nazrullah Khan	Zoos' print Journal June 2005
9	Rescue and rehabilitation of confiscated Indian star tortoises at Arignar Anna Zoological park, Tamilnadu, India	R.Thirumurugan, K.Senthilkumar and Praveen chandra Tyagi	Back to the wild : Studies in wildlife rehabilitation. Conservation reference series 2 Wildlife trust of India, New Delhi
10	A note on the birth of an Indian Giant Squirrel (<i>Ratufa indica</i>) pup at Arignar Anna Zoological Park, Chennai, India	K.Senthilkumar and R.Thirumurugan	Tiger Paper, Oct-Dec- 2005, Journal published by FAO, United Nations.
11	Ancylostomiasis in Dhole (<i>Cuon alpinus</i>) P. 2141-2142	K.Devaki, K.Senthilkumar , Pathan Nasrullahkhan and M.G.Jayathangaraj	Zoos' print Journal June 2005
12	Therapeutic approach in fungal infection in a Jaguar (<i>Panthera onca</i>) P. 2240-2241	K.Senthikumar, M.G.Jayaythangaraj, S.Ramesh, K.Devaki and Pathan Nazrullah khan	Zoos' print Journal October 2006.
13	Hand rearing of Hyena pups	K.Senthilkumar & R.Thirumurugan	Indian Zoo Year Book

3. DR.M.G.JAYATHANGARAJ (PROFESSOR AND HEAD, DEPT.OF WILDLIFE SCIENCE, MADRAS VETERINARY COLLEGE, CHENNAI)

NAME	Dr.M.G.Jayathangaraj, M.V.Sc., Ph.D., PG Dip. WL Mgt.,
ADDRESS	Official Associate Professor & Head, Dept.of Wildlife Science, Madras Veterinary College Chennai-7 Res No.4B, III Floor, Girija Apt, 100 Feet Road, Arumbakkam, Chennai -600 106
CONTACT MODE	Mobile: 9444128098 Email: mgjayathangaraj@yahoo.com

QUALIFICATIONS

DEGREES/DIPLOMA OBTAINED	INSTITUTION	YEAR & GRADES
B.V.Sc.	Tamilnadu Agricultural University	1983 & 3.84 / 4.00
M.V.Sc.	Tamilnadu Agricultural University	1985 & 4.00 / 4.00
Ph.D.	Tamilnadu Veterinary And Animal Sciences University	1994 & 4.00 / 4.00
Post graduate diploma in wildlife management (9 months duration)	Wildlife Institute of India	Top trainee-recognition

DETAILS OF POSITIONS

S.NO.	Name of post	Place where employed	Period
1	Assistant Professor	Madras Veterinary College	16-02-1990 TO 7-8-1997
2	Associate Professor	Madras Veterinary College	8-8-1997 TO TILL DATE
3	Professor	Madras Veterinary College	From Nov.2006 onwards

AWARDS OBTAINED

AWARD	DETAILS
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Dr.A.L. Mudaliar Award	Best performance in M.V.Sc. in the year 1985
Dr.R.Swaminatha Iyer Memorial Prize	Best article in Indian Veterinary Journal, 1995
Institute Prize	Top Trainee in PG Diploma Course on Wildlife Management

MEMBERSHIPS

S.NO.	DETAILS
1	Registered Member of Tamilnadu Veterinary Council (Reg.No. 1452)
2.	Member of Veterinary Council of India (Reg.No. 001267)
3	Life Member in Indian Society for Veterinary Medicine
4	Life Member in Indian Society for Veterinary Epidemiology & Preventive Mediciner
5	Served as Member in Board of Studies in Faculty of Veterinary and Animal Sciences
6	Currently as Member in Board of Studies in Faculty of Basic Sciences.

DETAILS OF BOOKS / BULLETINS WRITTEN IN THE FIELD OF WILDLIFE SCIENCE

8 nos.

DETAILS OF MANUALS WRITTEN

1. WILDLIFE STUDENT'S MANUAL - 1995
2. WILDLIFE VETERINARY MANUAL - 1998
3. MANUAL ON ZOOLOGICAL NAME OF WILD ANIMALS-2005
4. MANUAL ON WILD AND ZOO ANIMAL HEALTH CARE AND MANAGEMENT / FISH PRODUCTION - 2005 (ICAR SPONSORED)

NUMBER OF UG STUDENTS PROJECTS COMPLETED

6 Nos

NUMBER OF INFORMATIVE BULLETINS PREPARED IN FIELD OF WILDLIFE SCIENCE

12Nos.

NUMBER OF CDS PREPARED FOR WILDLIFE EDUCATION

3 nos.

ARTICLES PUBLISHED IN THE FIELD OF WILDLIFE SCIENCE:

51 nos.

NO. OF PROJECTS OBTAINED FROM EXTERNAL FUNDING AGENCIES

S.NO.	NAME OF THE SCHEME/PROJECT	NAME OF THE FUNDING	DURATION	FUNDS OBTAINED (in Rs.)	PI/COPI
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		AGENCY			
1.	Development of an Indian Cooperative Wildlife Health Programme and Technical Assistance in Wildlife Institute of India's health project	Wildlife Institute of India in collaboration with US Fish & Wildlife Services	Sept. 1995 to Sept. 2001	5.35353 lakhs along with following infrastructures: Maruty Gypsy (TNOI 7805), Computer with accessories including UPS, Koolatron 12 V cooler/warmer Practical MiniTower II Data/Fax modem, Pentax zoom camera, Immobilization equipments including long distance rifle, pistol, dart syringes etc. Teaching aids like videocassettes, journals etc.	Principal Investigator
2	Retrospective survey of diseases in free ranging ad captive wild animals.	Wildlife Institute of India	April 2000 to Nov. 2000	1 lakh	Principal Investigator
3.	Strengthening of Madras Veterinary College as Nodal Centre of Wildlife Health and Disease Diagnosis	Central Zoo Authority of India	July, 2002 to till date	45.68 lakhs	Principal Investigator

SEMINAR, WORKSHOP, SYMPOSIUM PARTICIPATED & CONDUCTED ATTENDED :

Name of the Seminar/Conference/Symposia/Wrokshop etc.	Name of the sponsoring agency	Place & Date	Ref.no. & Date of the order in which permitted by University
1. Computer course on MSDOS, MSWINDOWS, MSOFFICE & PAGEMAKER	TANUVAS	Chennai 24-4-96 to 9-5-96	Approved by university

2. National Seminar on The Current trends in the epidemiology and control of emerging sporadic diseases of livestock, poultry, pets and wild animals	TANUVAS	Chennai 12-7-96 to 13-7-96	Proc.no. 9106/Estt.B1/9 6 Dated 10-7-96 of Dean
3. Consultation Workshop for Research Priorities in Zoological Parks – Southern Region at Nehru Zoological Park	TANUVAS	Hyderabad 18-10-96	USO NO. 20389/A3/96; L.Dis No.24129/A3/ 96 Dated 17-10- 96 of Registrar
4. National Symposium on Immunoprophylaxis, control and eradication of diseases of livestock, poultry, pets and wildlife in veterinary practice	TANUVAS	Chennai 4-12-97 to 6-12-97	Approved by university
5. National Symposium on Sustainable animal health for 2000 and beyond the national perspective	TANUVAS	Coimbatore 10-12-98 to 12-12-98	No. 11257/Estt.B1/ 98 –III dated 1-12-98 of Dean
6. Training Programme on Information Retrieval System	TANUVAS	Chennai 10-7-00 to 12-7-00	USO NO.20144/A3/ 00; L.Dis No13056 of Registrar.
7. Computer training on Internet and Email applications	TANUVAS	Chennai 11-10-00	USO No.20363/A3/ 00; RC NO. 18410/A3/00 dated 26-9-00 of Registrar
8. National Symposium on Current features of specific diseases of animals and poultry including zoonoses	TANUVAS	Hyderabad 14-12-00 to 16-12-00	Approved by university
9. National Symposium on Indispensable anatomy – a tool in veterinary science	TANUVAS	Chennai 23-12-00 to 25-12-00	3892 / B/DFBS/2000 dated 22-12-00 of Dean
10. Seminar on elephant management and wildlife health care	TANUVAS	Mudumalai 3-2-01 to 4- 2-01	No. 3892/b/dfvs/20 00 dated 22- 12-00 of Dean
11. National Seminar on Patterns of	TANUVAS	Chennai	No.4724/B/DF

emerging animal disease impact on production and human health		7-12-01 to 9-12-01	BS/2001 dated 3-12-01 of Dean-FBS
12. Seminar on Impact of fragmentation on the biological species	TANUVAS	Chennai 26-12-01	DFBS No. 5147/B/01 dated 24-12-01 of Dean-FBS
13. Workshop on Management of Rare and Endangered wild animals	TANUVAS	Chennai 25-4-02 to 27-4-02	USO No.20038/A3/02; RC NO. 04520/A3/02 dated 24-4-02 of Registrar
14. Training on Tracheal and Bronchio-alveo endoscopy in Equines	TANUVAS	Hissar 8-11-03 to 9-11-03	Approved by university
15. National Symposium on VCI regulation governing undergraduate education in veterinary and animal sciences-a retrospection	TANUVAS	Chennai 22-1-04 to 23-1-04	No18961/Estt/B1/2003 dated 23-1-04 of Dean
16. Seminar on Intellectual Property Rights-Veterinary and Animal Sciences.	TANUVAS	Chennai 26-11-04	USO No.23073/A3/04; RC NO. 2307A3/04 dated 18-11-04 of Registrar
17. Second Regionsl Conference of Indian Zoo Directors.	Central Zoo Authority of India	Trivandrum 26-2-05 to 27-2-05	USO No.20619/A3/04; RC NO. 3419/A3/05 dated 24-2-05 of Registrar
18. Workshop on Capture of wild animals(Hyderabad)	AP State Forest Dept.	Hyderabad 8-9-05 to 9-9-05	USO No.20277/A3/05; RC NO. 17298/A3/05 dated 6-9-05 of Registrar
19. Zoo Veterinarian Conference	Central Zoo Authority of India	Mysore 16-9-05 to 17-9-05	USO No.20289/A3/05; RC NO. 18219/A3/05 dated 15-9-05 of Registrar
20. National Symposium on Wildlife Health and Husbandry Constraints	Assam State	Guwahati 24-10-05 to	USO No.20344/A3/

20. National Symposium on Wildlife Health and Husbandry Constraints	Assam State	24-10-05 to	24-10-05	USO	No.20344/A3	of Registrar dated 15-9-05	18219/A302	05; RC NO.	17-9-05	16-9-05 to	Mysore	USO	of Registrar dated 15-9-05
19. Zoo Veterinarian Conference	Central Zoo Authority of India	17-9-05	16-9-05 to	18219/A302	05; RC NO.	18219/A302	of Registrar dated 15-9-05	18219/A302	05; RC NO.	16-9-05 to	Mysore	USO	of Registrar dated 15-9-05
18. Workshop on Capture of wild animals (Hyderabad)	Forest Dept. AP State	9-9-05	8-9-05 to	17298/A302	05; RC NO.	17298/A302	of Registrar dated 6-9-05	17298/A302	05; RC NO.	9-9-05	Hyderabad	USO	of Registrar dated 6-9-05
17. Second Regional Conference of Indian Zoo Directors.	Central Zoo Authority of India	27-2-05	26-2-05 to	3419/A302	04; RC NO.	3419/A302	of Registrar dated 24-2-05	3419/A302	04; RC NO.	27-2-05	Tiruvandrum	USO	of Registrar dated 24-2-05
16. Seminar on Intellectual Property Rights-Veterinary and Animal Sciences	TANUVAS	26-11-04	26-11-04	2307A304	04; RC NO.	2307A304	of Registrar dated 18-11-04	2307A304	04; RC NO.	26-11-04	Chennai	USO	of Registrar dated 18-11-04
15. National Symposium on VCI regulation governing undergraduate education in veterinary and animal sciences-retrospection	TANUVAS	23-1-04	22-1-04 to	23-1-04	23-1-04	23-1-04	of Registrar dated 23-1-04	23-1-04	23-1-04	23-1-04	Chennai	No.18961/A311	of Registrar dated 23-1-04
14. Training on Tracheal and Bronchoscopic endoscopy in Equines	TANUVAS	9-11-03	8-11-03 to	8-11-03	8-11-03	8-11-03	of Registrar dated 8-11-03	8-11-03	8-11-03	8-11-03	Hissar	Approved by university	of Registrar dated 8-11-03
21. Brain Storming Meeting – Central Zoo Authority of India	Central Zoo Authority of India	27-4-05	27-4-05	22484/A3/05	05; RC NO.	22484/A3/05	of Registrar dated 7/4/05	22484/A3/05	05; RC NO.	27-4-05	Chennai	USO	of Registrar dated 7/4/05
26-10-05	Forest Dept.	26-10-05	26-10-05	20175/A3/05	05; RC NO.	20175/A3/05	of Registrar dated 10-10-05	20175/A3/05	05; RC NO.	26-10-05	Chennai	USO	of Registrar dated 10-10-05

INTERNATIONAL

1. USA Training programme	WILDLIFE INSTITUTE OF INDIA	USA 15-7-95 to 23-9-95	
1. Wildlife Seminar for Foreign Animal Disease Preparedness	-Do-	Athens, Georgia 8-8-95 to 10-8-95	
2. Joint Conference of the American Association of Zoo Veterinarians, the Wildlife Disease Association and the American Association of Wildlife Veterinarians	-Do-	East Lansing 12-8-95 to 17-8-95	USO NO. 20334/A3/95 ; K.DIS NO. 14895/A3/94 dated 10-7-95 of Registrar
3. Course-Wildlife Management and utilization	-Do-	Texas 28-8-95 to 7-9-95	
4. Captive Animal Management Training Course	-Do-	Fossil Rim Centre 7-9-95 to 21-9-95	
5. Training Workshop on Health Management of wild animals	ICAR	Dehradun 27-11-00 to 8-12-00	USO No.20461/A3/00 RC NO. 21848/A3/00 dated 7-11-00 of Registrar
6. Asian Congress of Zoo & Wildlife Veterinarians	Central Zoo Authority of India	Lucknow 4-2-04 to 5-2-04	USO No.20457/A3/03 RC NO. 23875/A3/03 dated 3-2-04 of Registrar
7. World Small Animal Veterinary Association - Continuing Education (CE) Program	-	Chennai 21-08-2005	-

SYMPOSIUM ETC. CONDUCTED NATIONAL

1. Wildlife Health and Disease (IWHC Project Seminar) (Chennai) — M.G.Jayathangaraj and Mathew C.John	TANUVAS	Chennai 28-4-00	Approved by university
2. Training programme on Wildlife Health and Disease Investigation (Chennai) — R.Vijayakumar, M.G.Jayathangaraj and Devaki Theogarajan	TANUVAS	Chennai 18-2-02 to 23-2-02	Approved by university
3. Training in Wildlife science for MP state Froest Dept. Veterinarians	WILDLIFE INSTITUTE OF INDIA	9-7-01 to 27-7-01	No. 2428/DFBS. B/2001 dated 4-7-01 of Dean I/C-FBS

INTERNATIONAL

1. Mentor for PG students from PURDUE University, USA in research on elephants	Purdue university, USA	Chennai 1999	USO No.20420/A3/99 RC NO. 26707/A3/99 dated 29-10-99 of Registrar
2. Study Programme on Wildlife Science for PURDUE University students, USA	Purdue university, USA	Chennai 22-5-03 to 4-6-03	USO No.50073/G2/03 RC NO. 2901/G2/03 dated 21-5-03 of Registrar

M.V.Sc. RESEARCH WORK GUIDANCE DETAILS

Guided and functioned as co-guide for fifteen M.V.Sc. research projects pertaining to offering of M.V.Sc. degree programme, in the field of Wildlife Science.

TEACHING EXPERIENCE IN THE FIELD OF WILDLIFE SCIENCE

For 12 years, associated with teaching of wildlife science related subjects to both undergraduate and postgraduate students of Madras Veterinary College, Chennai.

APPENDIX III

BACKGROUND INFORMATION ABOUT THE ZOO INVOLVED

Arignar Anna Zoological Park is situated at Vandalur which is 32 Km away from the metropolitan city of Chennai on the GST Road. Total area of this zoological park is six hundred and two hectares. Right from the start of this zoological park, many research activities are being carried out in collaboration with research institutions, universities etc.

The zoo receives a large number of animals from the Forest Department, Animal welfare organizations and Non-Governmental Organisations working for the cause of Wildlife conservation. These animals are rescued orphan animals, animals kept as pets by public who wish to donate and house them in the zoo and those seized from the illegal zoos and circuses.

There are co-ordinated captive breeding programme in the zoos of the Country. Arignar Anna Zoological Park has commenced a Co-ordinated captive breeding programme for Lion Tailed Macaque(LTM)in collaboration with other zoos and research organization.

APPENDIX IV

BACKGROUND INFORMATION ON COLLABORATING INSTITUTE

The Department of Wildlife Science which is the collaborating Department is functioning in the Madras Veterinary College which comes under the administrative control of TAMILNADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY and this department is currently functioning as NODAL

CENTRE FOR WILDLIFE HEALTH AND DISEASE DIAGNOSIS for ~~some~~ at Southern Region.

So far, sixteen projects were being carried out in the field of wildlife science and this collaborating department has produced many manuals and is offering post graduate programme and is actively associated with wildlife related research works. About fifty scientific articles were being published in this department. This had earlier participated in the projects funded by Wildlife Institute of India also. This department additionally is involved in the emergency field applications that arise in Arignar Anna Zoological Park, Vandalur and timely assistance is provided by this department to the zoological park, till date towards effecting health management and disease diagnosis.

Animal welfare organisations and Non-Governmental Organisations working for the cause of Wildlife conservation. These animals are rescued orphans animals, animals kept as pets by public who wish to donate and house them in the zoo and those seized from the illegal zoos and circuses.

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