

# The IETS Parent Committee on Companion Animals, Non-Domestic & Endangered Species (CANDES)



## Report to the IETS Board of Governors Working Group Meeting: 27 – 28 April 2002

The first working group meeting of the IETS CANDES Parent Committee was held on 27 – 28 April 2002 at the Henry Doorly Zoo in Omaha, Nebraska. The meeting overlapped with the first working group meeting of the American Zoo and Aquarium Association (AZA) Reproductive Sciences Advisory Group (Repro SAG) on 26 – 27 April 2002. The Henry Doorly Zoo sponsored the accommodations and meals for the joint meetings and assisted with travel expenses for some of the participants. A total of 16 CANDES Parent Committee members were present, including five new members to the IETS (Herrick, Kouba, D. Paris, Penfold and Vance; see page 4). It was decided that Parent Committee members may only serve on two of the four CANDES Subcommittees (see updated membership list on page 4) in order to avoid reduced productivity due to over-commitment as well as to facilitate the availability of meeting space (and lessen the chance for scheduling conflicts with other meetings) for each of the four Subcommittees at the annual IETS conferences.

### Summary of Activities (details can be found in the pages listed at the end of each point):

- I. Introductions and announcement of the next working meeting (27 September 2002) that will be held immediately preceding the 2<sup>nd</sup> Symposium on Assisted Reproductive Technology for the Conservation and Genetic Management of Wildlife (28-29 September 2002) at the Henry Doorly Zoo in Omaha, Nebraska (p. 6),
- II. Summary of the minutes from the first meeting held at the 2002 IETS annual conference in Brazil (pp. 6-7).
- III. Subcommittee Chairmen summarized the goals and objectives for each of their respective Subcommittees first discussed at the inaugural CANDES Parent Committee meeting in January 2002 (pp. 7-10).
- IV. Subcommittees met separately to discuss specific issues needing further clarification and discussion (pp. 10-13).
- V. Subcommittees expanded on specific, unresolved issues and proposed plans of action (pp. 13-15).
- VI. Subcommittee Chairmen presented final reports and action plans (pp. 15-18).
- VII. Other business:
  - a. Subcommittee membership will remain open until the 2003 IETS annual conference (p. 19).
  - b. The final draft of the Terms of Reference for the CANDES Parent Committee was completed (pp. 19-20; Appendix A).
  - c. The International Symposium on Assisted Reproductive Technology for the Conservation and Genetic Management of Wildlife will be the venue for future working meetings of the IETS CANDES Parent Committee (pp. 20-21).

- d. A modest annual budget allocation will be requested from the IETS to assist IETS CANDES Parent Committee members with travel expenses to attend and participate in the annual working meetings (p. 21).

### **Summary of Goals and Action Plans for the IETS CANDES Parent Committee:**

Regulatory Subcommittee: A primary goal of this Subcommittee will be to provide a quick reference resource for regulations applying to import/export of biological materials (gametes, embryos, tissues, blood and excreta) from animals covered by CANDES. Information has been forthcoming from committee members about specific species and different global regulations that apply to them. The Subcommittee plans to establish country-by-country clarification about permits required for CANDES tissue transport (governmental regulatory agencies and CITES). The information will be compiled in a standardized format (see example: Appendix B), organized and made available to the IETS membership through the IETS website or FASS office (see pages 12-13 for more details on short-term goals).

Research Subcommittee: The initial objective of this Subcommittee will be to compile information on existing protocols proven to be effective for synchronizing ovarian cycles, artificial insemination, embryo collection, production and transfer, as well as sperm and embryo cryopreservation in these species. This information will be compiled for a diverse array of taxa, with updates and new additions included on a regular basis, and written reports will be made available to IETS members through the IETS website or FASS office. A future objective of this Subcommittee will be to identify and prioritize critical areas in need of research to develop protocols for embryo transfer and related technologies in companion animals, non-domestic and endangered species. This information will be made available to research programs to draw upon (see pages 15-17 for specific plans of action).

Technology Subcommittee: The goals for this Subcommittee are to identify and prioritize important areas of field, laboratory and husbandry-based research that need technological development to broaden the application of assisted reproductive technologies in extant and extinct companion animals, non-domestic and endangered species. To achieve this goal, the Subcommittee will provide a framework of previous relevant information (e.g., research and patent literature, equipment and unpublished data) to initiate a starting point for the targeted technology.

Health & Safety Subcommittee: This Subcommittee will serve several important purposes including: 1) review literature on embryo and pathogen interactions in companion animals, non-domestic and endangered species (which is quite limited at present) and report these to the HASAC Research Subcommittee; and 2) review literature and identify studies on pathogen interactions with sperm and semen in all species and report these to the HASAC Research Subcommittee.

### **Specific Requests for Consideration and Approval by the IETS Board of Governors:**

1. Approval of the final draft of the CANDES Parent Committee Terms of Reference.
2. Approval for the inclusion of the CANDES Parent Committee on the IETS Website
  - a. Posting of ART protocols by Research Subcommittee;
  - b. Posting of country-by-country permit requirements for gametes, embryos, tissues, blood and excreta (governmental regulatory and conservation agencies such as CITES).
3. Approval for annual budget of \$6,000 to be used exclusively to assist CANDES Parent Committee members to attend an annual working meeting held in addition to the meeting held in conjunction with the IETS annual conferences.

Respectfully Submitted,  
Naida M. Loskutoff, Ph.D., Chairman, IETS CANDES Parent Committee

## **TABLE OF CONTENTS**

Report to the IETS Board of Governors.....	1
Attendance at the Working Group Meeting.....	4
Updated Subcommittee Membership Lists.....	5
Minutes from the Working Meeting.....	6
I. Venue and Date of Next Working Meeting.....	6
II. Summary of Minutes from the Last Meeting.....	6
III. Subcommittee Chairmen Summarize Original Goals.....	7
Research Subcommittee.....	7
Technology Subcommittee.....	8
Regulatory Subcommittee.....	8
Health and Safety Subcommittee.....	10
IV. Specific Subcommittee Issues Needing Further Discussion and Clarification.....	10
Research Subcommittee.....	10
Technology Subcommittee.....	11
Regulatory Subcommittee.....	12
V. Expansion on Specific, Unresolved Issues and Proposals for Action Plans.....	13
Research Subcommittee Issues.....	13
Technology Subcommittee Issues.....	13
Regulatory Subcommittee Issues.....	15
Health and Safety Subcommittee Issues.....	15
VI. Final Reports and Action Plans.....	15
Research Subcommittee.....	15
Technology Subcommittee.....	17
Regulatory Subcommittee.....	18
Health and Safety Subcommittee.....	18
VII. Other Business.....	18
Subcommittee Membership.....	18
Revision of the Terms of Reference.....	19
Wildlife ART Symposia.....	20
Financial Assistance to Attend Working Meetings.....	20
VIII. Contact Details.....	22
IX. List of E-mail Addresses.....	27
Appendix A: CANDES Parent Committee Terms of Reference.....	28
Appendix B: Regulatory Subcommittee information template.....	31
Appendix C: Report from the AZA Reproductive Sciences Advisory Group Working Meeting	

# The IETS Parent Committee on Companion Animals, Non-Domestic & Endangered Species (CANDES)



Working Group Meeting 27 – 28 April 2002: Omaha's Henry Doorly Zoo

## Parent Committee Members Present

Elizabeth Crichton (CCR, Henry Doorly Zoo, Omaha, NE)  
Philip Damiani (ACRES, New Orleans, LA)  
Karen Goodrowe (Point Defiance Zoo and Aquarium, Tacoma, WA)  
Jason Herrick (Purdue University, W. Lafayette, IN)  
Thomas Hildebrandt (Institute of Zoo Biology & Wildlife Management, Berlin, Germany)  
Andrew Kouba (Memphis Zoo, Memphis, TN)  
Rebecca Krisher (Purdue University, W. Lafayette, IN)  
Naida Loskutoff (CCR, Henry Doorly Zoo, Omaha, NE)  
Kari Morfeld (CCR, Henry Doorly Zoo, Omaha, NE)  
Damien Paris (Department of Zoology, University of Melbourne, Victoria, Australia)  
Monique Paris (Royal Children's Hospital, Murdoch Childrens Research Institute, Victoria, Australia)  
Linda Penfold (White Oak Conservation Center, Yulee, FL)  
Amanda Pickard (Institute of Zoology, London Zoo, UK)  
Bill Swanson (CREW, Cincinnati Zoo, Cincinnati, OH)  
Carrie Vance (Memphis Zoo, Memphis, TN)  
James (Buck) Williams (Texas A & M University, College Station, TX)

## Parent Committee Members Regrets

Mercedes Alvarez	Richard Fayer-Hosken	Justine O'Brien
Luis Anel	Robert A. Godke	Karine Onclin
Paul Bartels	Martha Gómez	Katie Pellican
Barry Bavister	Monica Hall-Woods	C. Earle Pope
Charlies Bormann	Rebecca Harris	Todd Robeck
Enrico Casadei	Paz Herraes	Cristina Rodriguez
Jackie Coulon	William Holt	Terri Roth
Eliza Curnow	Weizhi Ji	Mitch Schiewe
Berenice de Avila Rodrigues	Duane Kraemer	Kristin Sieren
John Diehl	Brad Lindsey	Julian Skidmore
András Dinnyés	R. Luzbel Jebsoth	Laszlo Solti
Robert Duby	Gaia Cecilia Luvoni	Rebecca Spindler
Rachel Durkin	Reuben Mapletoft	Jason Swain
Barbara Durrant	Gabriela Mastromonaco	Gabor Vajta
Klaus Eulenberger	Catriona MacCallum	John Versteegen
Diego Ezcurra	Ronaldo Morato	Matthew B. Wheeler
Wenche Farstad	Nei Moreira	

# **IETS CANDES Parent Committee Membership**

(updated 28 April 2002)

## **Chairman**

Naida Loskutoff

## **Secretary**

Amanda Pickard

## **Research Subcommittee**

(William Swanson & Rebecca Krisher, Co-Chairmen)

Paul Bartels\*  
András Dinnyés  
Robert A. Godke  
Wenche Farstad  
Brad Lindsey

Gaia Cecilia Luvoni  
Reuben Mapletoft  
Gabriela Mastromonaco  
Ronaldo Morato  
Nei Moreira

Monique Paris  
Terri Roth  
Rebecca Spindler\*  
John Versteegen

## **Regulatory Subcommittee**

(Elizabeth Crichton & Justine O'Brien, Co-Chairmen)

Paul Bartels\*  
Jackie Coulon  
Wenche Farstad

Martha Gómez  
Gabriela Mastromonaco  
Rebecca Spindler\*

John Versteegen

## **Technology Subcommittee**

(Philip Damiani & Thomas Hildebrandt, Co-Chairmen)

Paul Bartels\*  
Brad Lindsey

Ronaldo Morato  
Karine Onclin

Damien Paris  
Rebecca Spindler\*

## **Health & Safety Subcommittee**

(William Holt & Naida Loskutoff, Co-Chairmen)

Paul Bartels\*  
Reuben Mapletoft  
Nei Moreira

---

\*These members need to decide which of only two (maximum) Subcommittees they would like to continue with as active members.

**IETS CANDES Parent Committee**  
**Minutes from the Working Meeting: 27 – 28 April 2002**

- I. The next (half-day) working meeting of the CANDES Parent committee will be held in conjunction with the American Zoo and Aquarium Association (AZA) Reproduction Sciences Advisory Group on the 27 Sept 2002, immediately preceding the 2<sup>nd</sup> International Symposium on Assisted Reproductive Technology for the Conservation and Genetic Management of Wildlife (Wildlife ART Symposium) on 28-29 Sept 2002.**
- II. Brief summary of the minutes of the inaugural meeting held in January in association with the 2002 annual conference of the IETS.**
- Approximately 40 IETS members were present and many signed up for at least 2 CANDES Subcommittees.
  - Action items from the meeting were summarized for the IETS Board of Governors (see pages 8-9 of the Minutes from that meeting).
  - This meeting needs to decide whether to close Subcommittee membership now, or keep it open for the time being.
  - Subcommittee Chairmen are on a 2-year tenure, and will evaluate the contribution of their committee members every two years to recommend whether membership is revised or continues with the existing members.
  - The outgoing Board of Governors in Brazil recommended that HASAC and CANDES Parent Committee Chairs produce a 30-minute summary of their Committee's activities at the annual IETS conference. A summary of the transcript will be published in the following March newsletter.
  - The Research Subcommittee will aim to produce a searchable web-based resource of literature relevant to reproductive technologies in animals covered by CANDES. Recommendation about which species should be prioritized for research is, in the short term, beyond the scope of the CANDES group.
  - The Technology Subcommittee has been challenged to produce a list of alternative technologies for use in non-laboratory environments. They will identify priority areas for technology or equipment development for specific problem taxa.
  - The Health & Safety Subcommittee will address similar issues to the objectives of the existing IETS Health and Safety Advisory Committee (HASAC) – literature reviews on pathogen interaction with sperm/semens (HASAC covers embryos, CANDES will cover semen). The CANDES Health and Safety Subcommittee will be a closed committee to protect any unpublished data under consideration. In the future, they will look into making policy recommendations about semen disinfection and legislation. (Phil Damiani raised the issue of using oocytes in research that may be positive for pathogens, and moving subsequent *in vitro* derived embryos to other 3<sup>rd</sup> parties. The IETS HASAC is currently addressing these issues, as the use of *in vitro*-produced embryos for offspring production is not currently permitted).
  - The Regulatory Subcommittee will be gathering information from different countries about their legislation (governmental as well as CITES) regarding the movement of gametes and tissues from CANDES (embryos will be covered by the IETS HASAC). Future proposals

will be to create a common format for transfer forms (including governmental regulatory agencies, CITES and breeding loan agreements between and within zoos and other legitimate breeding programs for animals covered by CANDES).

Thomas Hildebrandt asked how an ejaculate should be classified. Is it considered to be a tissue, as it only contains one cell type? This will need to be debated further.

**III. Subcommittee Chairmen summarized the goals and objectives for each of their respective Subcommittees first discussed at the inaugural CANDES Parent Committee meeting in January 2002.**

**Research Subcommittee report**

This group's initial objective is to serve as an information resource for assisted reproduction protocols.

Initially the group has identified about 10 taxa for priority consideration and proposes to identify an associated expert who could accumulate the protocols for those taxa.

The protocols should be written within a set format and submitted to the IETS website for public access (similar to the HASAC format but -- if possible -- in addition to the "pull-down menu", include a search engine that can find specific protocols for specific taxa -- *\*\*need to ask Jennifer Gavel if this would be possible*).

Each protocol should be supported by a list of references that demonstrate its validity. Unproven protocols are unacceptable. In the case where data are not published, supporting information may be supplied, but the researcher will be responsible for choosing whether or not to use this approach.

In the circumstance where there is more than one published protocol, no recommendation will be given as to which protocol is the best, but all will be included to allow researchers maximum choice.

Damien Paris asked whether the protocol listing will be searchable by taxon or protocol? It was considered that taxon searching would be most relevant, however, having the ability to search by both taxa and protocol can serve to be equally useful.

Thomas Hildebrandt asked whether supporting technologies (e.g. anesthetic protocols) be included. This may be included if it is pertinent to the success of the protocol, as may be recommendations for endocrine monitoring, etc. The subcommittee will evaluate the level of detail required on a case-by-case basis. *It was decided that initially, the scientists submitting the protocols will be able to provide information as they feel is appropriate.*

Thomas Hildebrandt raised concerns about making detailed protocols for highly endangered species public, which may encourage inappropriate or irresponsible application. It was suggested that expert contact information should be provided in these cases.

## **Technology Subcommittee report**

Phil Damiani has commenced a literature search, to identify potential new technologies for field application and CANDES application.

The Technology Subcommittee has already facilitated contact between people working in a particular field and researchers attempting to set up complimentary projects, to prevent duplication of effort. These requests could be forwarded to the AZA Reproductive Sciences Advisory Group network in future, and may expand the international scope of that committee.

Contacts with companies who may be interested in supplying trial equipment for use in specific projects are being made. As yet, no strategy has been established on how to operate a clearing-house for equipment or cover any costs incurred in shipping the equipment. It is recommended that researchers provide a courier account number to meet the cost of shipping the equipment.

The Technology Subcommittee proposes to assess whether new technologies will be applicable for non-domestic animals. They will also aim to talk directly to researchers, to clarify true success rates and facilitate contacts with interested CANDES researchers if deemed appropriate.

The committee recognizes that it may need to address different issues relating to material from live or dead animals. Three areas of consideration for technical development include:

1. Collection of gametes/embryos,
2. Laboratory culture (e.g., IVF, IVM, ICSI, NT, etc.) and
3. Reintroduction of embryos (ET).

## **Regulatory Subcommittee report**

The objectives of this committee are outlined in the CANDES Parent Committee Terms of Reference (Appendix A).

Primary goals of the Regulatory Subcommittee will be to provide a quick reference resource for regulations applying to import/export of biological material from animals covered by CANDES.

Information has been forthcoming from committee members about specific species and different global regulations that apply to them.

The Subcommittee plans to establish country-by-country clarification about permits required for CANDES tissue transport (both from governmental regulatory agencies and CITES), and explore the preparation of a common format for permits, which would require OIE approval. *It was suggested by Naida Loskutoff that the IETS HASAC Regulatory Subcommittee (Larry Delver, Chairman) be approached to request that one or both of the CANDES Regulatory Subcommittee Co-Chairmen (Crichton and O'Brien) be considered for membership to facilitate information transfer between and within the two Subcommittees regarding this specific issue.*



The Subcommittee will also explore the possibility of providing examples or recommendations of contracts/agreements for the transfer and ownership of biomaterials from animals covered by CANDES. *Beth Crichton (Subcommittee Co-Chairman) will liaise with the newly established American Zoo and Aquarium Association (AZA) Biomaterial Banking Advisory Group (BBAG; Cathi Lehn, Wildlife Conservation Society, Chairman) to participate in discussions regarding this issue.*

Justine O'Brien has produced a sample template of the import/export permit rules and regulations as they apply to Australia; this could be used to compile information for each major country. It includes contacts, websites etc. and regulations for the import/export of biological materials. It may subsequently need to be further broken down into CITES, nondomestic and companion animals and into material of interest. Information from Canada and the USA is currently being compiled using this template (Appendix B).

Phil Damiani raised the need to confirm that the information sources are accurate and up-to-date so that our information is also. Also, there is a need to clarify end usage of the material and the phraseology used in the license application. The ability to trace material back to its place of origin and any trans-shipment locations must be considered. A chain of responsibility for keeping this information up to date must be established.

It was suggested that a list of "contact people" be compiled to include those in specific countries that deal directly with permits (e.g., governmental authorities) or researchers actively working on import/export issues in certain countries, e.g., Linda Penfold and Kenya.

Additional topics mentioned that were discussed at the January 2002 meeting:

- Compiling a list of species whose biological material is not regulated.
- Compiling a list of contact details on regulatory officials in different countries that would be willing to provide information.
- Regulations that may vary, depending on the sample collection protocol.
- Issues of labeling and storage to prevent disease transmission -- this is an issue of the HASAC Certificate and Forms Subcommittee (Irma Robertson, Chairman) for embryos and the CANDES Health and Safety Subcommittee for semen.
- Investigating a recent USDA directive that no date-expired drugs (including lyophilized hormones) may be used in zoo animals (e.g., surplus drugs from human clinics).
- Addressing the recent move by US Fish and Wildlife Service to more stringently interpret applications for endangered species permits on the basis that the transporting animals and/or their material must be of benefit to animals in the wild.
- Address issues relating to differing regulations for specimens (e.g., semen) that are designated for in vitro use only versus in vivo application (e.g., artificial insemination, embryo transfer).

These topics will be deferred to the next CANDES Parent Committee meeting on Friday, 27 September 2002 when the Regulatory Subcommittee Co-Chairmen will ask for assistance in dealing with these issues from their Subcommittee members including the possibility of forming *ad hoc* committees.

## **Health and Safety Subcommittee**

Bill Holt and Naida Loskutoff are currently working on compiling literature pertaining to pathogen interactions with sperm/semens in all species including livestock and humans. This information will be organized in the same format used by the IETS HASAC Research Subcommittee (David Stringfellow, Chairman) – abstracts with complete citations. A draft document will be prepared and will be sent to the members of the CANDES Health and Safety Subcommittee and David Stringfellow by November 2002.

An additional goal of this Subcommittee is to review the literature and solicit information on research planned or in progress on pathogen interactions with embryos for animals covered by CANDES. This information will be made available to the HASAC Research Subcommittee Chairman for inclusion in their report.

## **IV. Specific Subcommittee Issues Needing Further Discussion and Clarification**

Subcommittee Chairmen expanded on the objectives for their respective Subcommittees, grouped similar topics, prioritized and identified goals as short-term and long-term, and suggested plans for action.

### **Research Subcommittee**

1. The Subcommittee has reviewed taxa and prioritized those which they will initially focus on collating protocols for.

They have proposed nominating a member or expert responsible for generating taxon specific data:

Carnivores – Bill Swanson  
Ungulates, Pachyderms, Camelids – Rebecca Krisher  
Aves – Anne Donoghue  
Amphibians and Reptiles – Andy Kouba  
Non-human primates – Justine O'Brien  
Marsupials – Monique Paris  
Marine mammals – Todd Robeck  
Non-laboratory rodents/lagomorphs – Pat Concannon  
Invertebrates – Anita Collins  
Fish – Mary Hagedorn

Protocols should be generated in the following specific categories:

- Embryo Transfer – recipient synchronization, ET approach (transcervical/laparoscopic).
- Gamete/embryo collection – electroejaculation, artificial vagina, voluntary manual stimulation, oocyte aspiration, superovulation, oocyte/embryo flushing.

- Artificial insemination – semen/sperm preparation, estrus synchronization, AI approach (e.g., transcervical/laparoscopic/deep uterine insemination).
- In vitro fertilization/*in vivo* culture – ovarian stimulation, oocyte recovery and maturation, sperm capacitation, embryo culture, xenotransplantation
- Cryopreservation – sperm, embryo, oocytes, straws, vials, loops, open pulled straws, ovarian/testicular tissue, cell lines, tissue
- Endocrinology – enzyme immunoassay, radioimmunoassay, saliva, fecal, urine, blood

A structured reporting method will be developed to facilitate the collection of standardized information. This will include:

- Title
- When developed, revised
- Material
- Equipment
- Step by step
- Contact person
- References

The issue of whether specifics such as catalogue number for chemicals or media should be included was raised. It was considered that a qualifying statement to the effect that the quality of chemicals may vary and affect the outcome of the experiment should be included and the researchers advised to approach the contact person if in doubt.

We need to convey the benefits of providing protocols to the donors and provide them with a simple form to encourage submission. Disclaimers should be included when the protocols are placed on the website, requesting citation of the primary references when any resultant data is published.

### **Technology Subcommittee**

1. The committee will aim to identify new technology, and ask investigators to write a protocol for submission to the Research Subcommittee.
2. A bibliography of new techniques that can be used in the laboratory and in field situations will be compiled.
3. Contact with companies developing new or revised equipment, or developing new technologies will be established and maintained. Some companies may be willing to have their products evaluated by researchers on a confidential basis.

4. The Technology Subcommittee will endeavor to raise awareness within these companies of the need for the development of specific equipment etc., and that these needs will increase as more work in the CANDES field is carried out.
5. The Subcommittee will re-direct enquiries to the AZA Reproductive Sciences Advisory Group Referral Network as and when appropriate.
6. Funding sources for technology development will be identified and a list established.

### **Regulatory Subcommittee**

1. How should the collation of the list of country regulations be prioritized?
  - Alphabetically
  - By addressing immediate needs of researchers
  - By degree of traffic in/out of that country
  - By contacting committee members in various countries

Ideally, a 3D table of country-to-country permit requirements would be created. This may need to be species or taxon-specific.

The objective would be to be able to search this table by exporting country to importing country and vice versa.

2. The issues relating to the country of origin of media used for storage, shipping or culture need to be considered. In some cases, cell lines or tissues may need to be quarantined if media from a range country source is used. This may differ for live and fixed tissue. It may be possible to irradiate fixed tissues to sterilize them, but this is not possible for “live” material. The need to identify an import and export contact in each country became apparent, for clarification of case specific issues. An additional problem in the US may be that State specific regulations apply.

**Short term goal** - Establish database of contact people (referral service) for researchers to contact about their specific needs, while the information is being collated. Zoo or collection registrars may have detailed contact information and could be approached to help with this task.

Potential categories that may require specific clarification include:

- Live/Dead
- Fixed/Fresh
- Gametes – oocytes, semen
- Embryos
- Tissue samples
- *in vivo* / *in vitro* use of material
- Cell lines
- Serum

- Fecal samples
  - Urine samples (invasive versus non-invasive collection)
  - Domestic/non-domestic species
  - CITES species/Agricultural species or rare breeds
3. Does the CANDES Parent Committee need to recommend a *quid pro quo* for receiving valuable material from range countries? Should researchers be willing to put a financial value or identify ownership of any offspring resulting from the international transport of reproductive material? It was suggested that we should make recommendations on wording that could be included in permits and transfer agreements.

The Regulatory Subcommittee should collaborate with the AZA BBAG (Cathi Lehn) on similar ownership issues.

4. Should the CANDES/IETS have an ethical statement on the use of reproductive technologies, which researchers could use to endorse proposals put forward to local or national ethical boards? Would it protect researchers or leave the Society open to legal challenge? Should such a statement be a potential mission statement or policy recommendation to be provided upon request? *Naida Loskutoff will obtain the ethical statement that was made by the IETS Import-Export Committee mentioned by Reuben Mapletoft at the January 2002 meeting, and will raise this issue with the IETS Board of Governors at their mid-year teleconference to establish their position on this matter.*
5. Concerning the issues of the USDA ban on the use of out of date drugs – is this an issue we should be concerned about or just accept it? Do exceptional cases exist with this ruling? What is the underlying reason for the change in USDA policy? Clarification is required as to whether this applies to research, veterinary medicine, or zoo animals (where material will not be entering the food chain). *Naida Loskutoff volunteered to look into this further and will report at the September 2002 meeting.*

## **V. Expansion on Specific, Unresolved Subcommittee Issues and Proposals for Action Plans**

### **1. Research Subcommittee Issues**

The members considered whether the name of this Subcommittee reflects its immediate role? Changing the name to the “Methodology” Subcommittee was considered but rejected on the basis that this may not reflect the Subcommittee’s role in the future, which may change.

### **2. Technology Subcommittee Issues**

It was apparent that the Subcommittee Co-Chairmen (Damiani & Hildebrandt) had two different views as to the purpose of this Subcommittee. The members of this group that were present (Damiani, Hildebrandt and D. Paris) met to decide on a common purpose. They proposed the following goal:

**To identify and prioritise important areas of field, laboratory and husbandry-based research that need technological development to broaden the application of assisted reproductive technologies in extant and extinct companion animals, non-domestic and endangered species. To achieve this goal, the IETS CANDES Technology Subcommittee will provide a framework of previous relevant information (e.g., research and patent literature, equipment and unpublished data) to initiate a starting point for the targeted technology.**

Examples were given on the role this Subcommittee might play to the effect that they were willing to source information on new technology but not recommend whether an already existing protocol that might have been developed in animals other than those included in CANDES would be suitable for CANDES (defined as companion animals -- including cats, dogs, birds, amphibia, reptiles, fish and excluding domestic horses; non-domestic species including farmed animals such as buffalo, cervids, camelids, ratites and canids, in addition to a diverse array of zoo animals; as well as their endangered species counterparts).

Bill Swanson (Research Subcommittee Co-Chairman) expressed that the Technology Subcommittee needed to address where the gaps in our knowledge or technology lie and promote scholarly research in these areas, and identify lateral technologies that might help to bridge these gaps. Thomas Hildebrandt felt that it was irresponsible to recommend modifying protocols to use in CANDES without undertaking the basic research on the individual species first. Naida Loskutoff explained that she believed it is the Technology Subcommittee's position to emphasize the need for basic research before applying high technology protocols, and help researchers prioritise what their research direction should be.

The Research Subcommittee expressed that they would not be in the position to review non-CANDES (e.g., domestic livestock and humans) protocols and, therefore, that this should fall to the Technology Subcommittee. They believe that the Technology Subcommittee should be attempting to identify the specific needs of CANDES biology and then look to see if non-CANDES technology might exist to address this.

Concerns were raised as to how to address the eventuality where the committee identifies new technology in an under-resourced country or laboratory and puts the researcher in contact with a lab or company who can help them. A way to endeavour to protect the researchers' intellectual property needs to be considered, and whether the Technology Subcommittee should get some royalty for making the introduction.

The members debated whether it is the role of IETS to be concerned with this and how confidentiality issues should be addressed. Patent lawyers could be appointed, but there would be difficulties associated with funding this. Also, the need to ensure continuity in the future, when committee chairs change, and to prevent ruthless individuals from making personal gain need to be addressed.

It was proposed that the role of the Technology Subcommittee should be to simply consider technologies as and when they are published. However, we need to consider the possibility that

by bringing together groups of scientists who may be able to work together to address a particular problem we may be able to facilitate major advances.

The prospect of forming an *ad hoc* Intellectual Property Committee within the Technology Subcommittee was proposed, as was the option of limiting our activities to facilitate research funding opportunities to enable such collaborations.

The members also considered whether the Technology Subcommittee should become a closed committee and sign a confidentiality agreement before considering any of these issues?

*Naida Loskutoff will address the IETS Board of Governors about their position on this issue at their 2002 mid-year teleconference.*

### **3. Regulatory Subcommittee Issues**

Thomas Hildebrandt asked how an ejaculate should be classified. Is it considered to be a tissue, as it only contains one cell type? The feeling is that ejaculates are a tissue as they contain multiple cell types. Beth will clarify this further as a regulatory issue. Are there significantly different regulatory issues when transporting gametes, embryos, cells or tissues? *Beth Crichton will look into this and report at the next working group meeting in September 2002.*

Should all transfer agreements in regards to CANDES be considered by this Subcommittee? Should this Subcommittee investigate the standardization of transfer agreements (ownership of gametes, embryos, tissue or offspring resulting from those biomaterials used in applied assisted reproductive techniques) within and between zoos, universities and range countries?

### **4. Health and Safety Subcommittee Issues**

Due to the fact that there may be discussions of planned research or unpublished data regarding pathogen interactions with sperm/semens as well as embryos, the CANDES Health and Safety Subcommittee will be restricted to Subcommittee members only.

## **VI. Final Reports and Action Plans**

### **Research Subcommittee**

Subcommittee Terms of Reference – (use general revised explanation from IETS petition)

Primary Goal of Subcommittee

- To provide investigators with access to reproductive research protocols in diverse taxa

Specific Objectives:

- 1) Identify taxa for initial focus
- 2) Identify lead person for each taxon
- 3) Identify research disciplines for protocol acquisition

- 4) Create sample protocol for investigators to use as a model
  - a) Format (Standard Operating Procedure or SOP) – necessary and optional components
  - b) References or unpublished data (must substantiate protocol for inclusion)
  - c) Contact info (minimum - investigator e-mail)
- 5) Collect and post on website (as downloadable PDF or online readable HTML)

#### Action Plan

- 1) Identify primary taxa for initial focus - done
  - a) Carnivores (felids/canids/ursids)
  - b) Ungulates (including camelids and pachyderms)
  - c) Birds
  - d) Amphibians and reptiles
  - e) Non-human primates
  - f) Invertebrates
  - g) Marsupials
  - h) Marine mammals
  - i) Fish
- 2) Recruit lead persons for each taxon – Bill Swanson – 3 months (by August 2002)
  - a) Carnivores – Bill Swanson
  - b) Ungulates – Rebecca Krisher
  - c) Birds – Ann Donoghue (?)
  - d) Amphibians and reptiles – Andy Kouba
  - e) Non-human primates – Justine O’Brien (?)
  - f) Invertebrates – Anita Collins (?)
  - g) Marsupials – Monique Paris
  - h) Marine mammals – Todd Robeck (?)
  - i) Fish – Mary Hagedorn (?)
- 3) Identify research disciplines for protocol acquisition – done
  - a) Gamete/embryo collection – electroejaculation, voluntary semen collection (artificial vagina, masturbation), ovarian stimulation, oocyte collection (laparotomy, laparoscopy, transvaginal), embryo recovery (transcervical, laparoscopy, laparotomy), post-mortem techniques
  - b) In vitro techniques – in vitro fertilization, in vitro maturation, follicular maturation, xenotransplantation, sperm capacitation, in vitro culture, micromanipulation (sperm injection, embryo splitting/biopsy, nuclear transfer), staining, metabolism assays
  - c) Cryopreservation – oocytes, sperm, embryos, tissues and cell lines
  - d) Reproductive monitoring – reproductive and stress hormones in fecal, urine, blood, and saliva samples, vaginal cytology, ultrasonography
  - e) Artificial insemination – method (transcervical, laparoscopy, laparotomy), ovarian stimulation, ovulation induction
  - f) Embryo/oocyte transfer – method (transcervical, laparoscopy, laparotomy), recipient synchronization



- 4) Create sample protocol – Rebecca Krisher – 3 months (by August 2002)
  - a) Format – necessary and optional components
    - 1) Materials and methods presented in a clear (English only), step-by-step manner
    - 2) Sources of unique equipment and reagents listed (company name and address)
    - 3) Written with Microsoft Word or WordPerfect software
    - 4) Optional information: suggested fonts and margins for protocols, catalog numbers for reagents, e-mail/phone/fax numbers for manufacturers,
  - b) References
    - 1) All protocols must be substantiated by investigator in some way, via either peer-reviewed papers or abstracts, or summary of unpublished data
  - c) Contact information
    - 1) Investigator and e-mail address for contact
    - 2) Optional info: address, phone number, fax number
  
- 5) Provide sample protocol to taxa lead people and begin collecting protocols from investigators – taxa lead persons (collect protocols for their taxa and forward to Bill/Rebecca) – ongoing after 3 months (beginning August 2002)
  - a) Compose explanatory letter to send to taxa leads/investigators to solicit protocols
  
- 6) Provide protocols in proper computer format for posting on IETS website – Bill/Rebecca – within 1 year (by April 2003)
  - a) Contact web site person at IETS (Jennifer Gavel) for posting procedure
  - b) Write disclaimer concerning investigator responsibility in using protocols and
  
- 7) Provide periodic updates to website – Bill/Rebecca – ongoing
  - a) Submit new/revised protocols once a year to IETS web site
  - b) Contact protocol submitters once a year for any modifications
  - c) Solicit new protocols annually at IETS conference/Wildlife Symposia

### **Technology Subcommittee**

It was proposed that the Subcommittee be subdivided into *ad hoc* committees, to separately:

- 2) Identify new technologies required for species covered by CANDES, and
- 3) Address potential non-CANDES protocol application to meet CANDES requirements.

Another potential *ad hoc* committee that should be discussed and explored would be one that dealt with intellectual property issues. Alternatively, this issue can be dealt with by the first *ad hoc* committee that will identify new technologies required for species covered by CANDES.

Phil Damiani recommended that the Technology Subcommittee members in absentia be asked for their opinion on the goals and on which *ad hoc* committee they would participate in, and contribute to, before any further short-term goals or action plans are discussed.

## **Regulatory Subcommittee**

1. Reference resource for regulatory requirements: the template document (Appendix B) for recording the rules and regulations for the import and export of biological materials will be distributed to the Subcommittee members who will be assigned to compile the information for different countries. The Subcommittee will also be asked to submit names of people working in governmental and CITES regulatory departments that would be willing to serve as a network referral service for specific questions regarding the transport of biomaterials from CANDES. *Naida Loskutoff, a current member of the IETS HASAC Regulatory Subcommittee will approach Larry Delver (Regulatory Subcommittee Chairman) and Michel Thibier (HASAC Chairman) about replacing her with one or both of the CANDES Subcommittee Co-Chairmen (Beth Crichton and Justine O'Brien) to facilitate communication between both groups.*
2. Liaison with AZA Biomaterials Banking Advisory Group (BBAG): owing to the substantial benefit that can arise from joint discussions, especially on transfer and ownership agreements, Subcommittee Co-Chairman Crichton will serve on the AZA BBAG.
3. Request for official, ethical statement regarding use of ART with CANDES and the USDA policy banning the use of expired hormone preparations: more information will be gathered and these items will be discussed further at the next working meeting on 27 September 2002.

## **Health and Safety Subcommittee**

The draft document on pathogen interactions with semen will be distributed to the members of this Subcommittee, as well as David Stringfellow (Chairman of the HASAC Research Subcommittee) by November 2002 for review. A four-hour working meeting will be held just prior to the 2003 annual IETS conference to discuss the reviews (restricted to CANDES Health and Safety Subcommittee members only).

- A comprehensive report from the January 2003 meeting will be sent to the members of the CANDES Health and Safety Subcommittee as well as the members of the IETS HASAC Research Subcommittee.
- An abbreviated report (excluding any unpublished data or work in progress) will be included in the final CANDES Parent Committee report after the January 2003 meeting that will be submitted to the IETS Board of Governors and CANDES Parent Committee members.

## **VII. Other Business**

### **Subcommittee Membership**

This meeting needs to decide whether to close Subcommittee membership now, or keep it open for the time being. It was considered that the people who signed up in Brazil may not actually be

in the position to take an active role in the Subcommittees. Many may find that they are limited as to their ability to attend meetings and therefore may drop out. The group’s consensus is to keep membership in the Parent Committee open until the New Zealand conference, allowing recruitment of more people and those who attend the September workshop and the Annual Conference to confirm their intent to participate.

### Revisions of the Terms of Reference

The text of the Terms of Reference for the CANDES Parent Committee was reviewed and revised to reflect matters that had come to light as a result of the weekend’s discussions (Appendix A). Major revisions to the original draft included: 1) removing “vertebrate” from the preamble and inserting fish and invertebrates in the species of interest; 2) adding “recognized specialty groups” (e.g., hobbyists) to “international governmental regulatory agencies and organized conservation programs such as regional zoo associations world wide and the IUCN SSC Conservation Specialist Group” as programs that will benefit from this Committee; 3) expanding the Mission Statement by stating that “An important goal of this Committee is to assist in the understanding of the unique reproductive strategies of those species and to facilitate in the application of assisted reproductive techniques to these species”; and 4) replacing the statement regarding using the Henry Doorly Zoo as the venue for all future working meetings by a statement that the working meeting will be held in association with the annual Wildlife ART Symposia and the working meeting of the AZA Reproductive Sciences Advisory Group and potentially similar groups in other regional zoo associations worldwide (see Table 1).

**Table 1. List of regional zoo associations (contact details can be found on the internet).**

ALPZA	Latin American Association of Zoological Gardens & Aquariums
AMACZOOA	Mesoamerican & Caribbean Zoo & Aquarium Association
ARAZPA	Australasian Regional Association of Zoological Parks & Aquariums
AZA	American Zoo & Aquarium Association
AZCARM	Mexican Association of Zoos & Aquariums
CAZG	Chinese Association of Zoological Gardens
CAZA	Canadian Association of Zoos & Aquariums
EAZA	European Association of Zoos & Aquaria
FUNPZA	National Foundation of Zoological Parks and Aquaria (Venezuela)
FZG	Federation of Zoological Gardens of Great Britain & Ireland
IZDA	Indian Zoo Directors Association
JAZGA	Japanese Association of Zoological Gardens & Aquariums
PAAZAB	Pan African Association of Zoological Gardens, Aquariums & Botanical Gardens
PKBSI	Indonesian Zoological Parks Association
SEAZA	South East Asian Zoo Association
ZPO	Zoological Parks Organization of Thailand

## **2002 Wildlife ART Symposium**

Each speaker has been asked to submit a 2-4 page abstract and a COMPREHENSIVE bibliography of relevant literature for inclusion in the proceedings (they should include any references, and not necessarily their own, pertaining to their topic). Special issues of Zoo Biology (guest edited by Karen Goodrowe) and Theriogenology (guest edited by Rebecca Krisher) have also been commissioned to allow publication of a selection of full manuscripts from these presentations.

Bill Swanson suggested that one paper be solicited from each of the different sessions to emphasize the scope of the subject matter.

Posters have been included by request, and there will be the opportunity to select some abstracts from the poster presentations for short (10 min) communications at the meeting. The Parent Committee considered whether the abstracts should be refereed before acceptance for inclusion in the proceedings. It was considered that the Session Chairmen should review the invited papers, to ensure the guidelines had been met and the quality was acceptable, and that the poster abstracts will be accepted with cursory review (by CANDES Parent Committee members), to ensure the quality and integrity of the symposium and protect the reputation of the IETS and the Parent Committee. Those presenting posters are asked to give a shorter (1-2 page) abstract and comprehensive reference list for inclusion in the electronic version of the proceedings. Program information for the 2002 symposium and instructions for preparing the electronic proceedings articles are available by sending requests to [ARTSymposia@omahazoo.com](mailto:ARTSymposia@omahazoo.com).

It was decided at this stage in the development of the regular symposia, that we would not stringently follow the IETS conference guidelines regarding posters being refereed by two external reviewers, or presented based on recently published work. This decision was made so as to not exclude the participation of researchers focusing on animals covered by CANDES which may be subject to limitations inherent to research on such animals. However, it is anticipated that future symposia will certainly be subject to peer-review as this can only serve to enhance the quality of the programs and ultimate benefit to breeding and conservation programs for companion animals, non-domestic and endangered species.

### **Financial Assistance for CANDES Parent Committee Members to Attend Working Meetings**

A request will be made to the IETS Board of Governors in the report resulting from this meeting for a modest annual budget of \$6,000 to assist CANDES Parent Committee members with travel expenses to attend and participate in the annual working meetings. Since the next working meeting is scheduled for 27 September 2002, the request will be made at the IETS Board of Governors mid-year teleconference scheduled for June 2002. If approved, the funds will be distributed to each of the four Subcommittees (\$2,000 each to Research and Technology, \$1,000 each to Regulatory and Health & Safety) whose Co-Chairmen will decide which of their members will receive the financial support for travel expenses to Omaha, Nebraska (Subcommittee Chairmen Crichton and Loskutoff will not be receiving any of this funding). These funds will only be used for travel expenses for IETS CANDES Parent Committee members to attend the working meetings and not the annual meetings associated with the IETS

annual conferences. Chairman Loskutoff will include in her January report to the IETS Board of Governors an itemized list of how the funds were distributed and used. It should also be noted that since the working meetings will be associated with the annual International “Wildlife ART Symposia” of which all CANDES Parent Committee members are urged to participate in, the IETS will be acknowledged as a major sponsor on all program materials and proceedings.

## VIII. Contact Details

Mercedes Alvarez, PhD  
University of Leon  
Animal Reproduction  
Campus de Vegazana s/n  
24071 Leon, Spain  
Tel: +34-98-729-1430  
Fax: +34-987-291-1322  
E-mail: [dsanag@unileon.es](mailto:dsanag@unileon.es)

Luis Anel, PhD  
University of Leon  
Animal Reproduction  
Campus de Vegazana s/n  
24071 Leon, Spain  
Tel: +34-98-729-1320  
Fax: +34-987-291-1322  
E-mail: [dsalar@unileon.es](mailto:dsalar@unileon.es)

Dr. Paul Bartels  
EWT – Wildlife Biological  
Resource Centre  
P.O. Box 582  
Pretoria, South Africa  
Tel: +27-12-305-5840  
E-mail: [paulb@wbrc.org.za](mailto:paulb@wbrc.org.za)

Barry Bavister, PhD  
AICRES  
14001 River Road  
New Orleans, LA 70131  
Tel: +1-504-398-3162  
Fax: +1-504-398-3100  
E-mail: [bbavister@acres.org](mailto:bbavister@acres.org)

Enrico Casadei  
FAO  
Via Terese di Conaocolla  
00100 Rome, Italy  
Tel: +39-065-705-4794  
E-mail: [Enrico.Casadei@FAO.ORG](mailto:Enrico.Casadei@FAO.ORG)

Jackie Coulon  
AICRES  
14001 River Road  
New Orleans, LA 70131  
Tel: +1-504-398-3166  
Fax: +1-504-398-3100  
[lab@acres.org](mailto:lab@acres.org) (attn: Jackie)

Elizabeth G. Crichton, PhD  
Center for Conservation & Research  
Henry Doorly Zoo  
3701 South 10<sup>th</sup> Street  
Omaha, NE 68107-2200  
Tel: +1-402-733-8401, ext. 5055  
Fax: +1-402-733-0490  
E-mail: [repro@omahazoo.com](mailto:repro@omahazoo.com)

Eliza Curnow  
University of Washington RPRC  
Box 357331,  
Seattle, Washington 98119-7330  
Tel: +1-206-543 8399  
Fax: +1-206-543 1589  
E-mail: [ecurnow@bart.rprc.washington.edu](mailto:ecurnow@bart.rprc.washington.edu)

Philip Damiani, PhD  
AICRES  
14001 River Road  
New Orleans, LA 70131  
Tel: +1-504-398-3  
Fax: +1-504-398-3100  
E-mail: [pdamiani@acres.org](mailto:pdamiani@acres.org)

Berenice de Avila Rodrigues, DVM, MSc  
UFRGS – Brasil  
Av. Cristorei, 134  
93020-350 São Leopoldo  
RS, Brasil  
Tel: 51-592-6628  
Fax: 51-331-66126  
E-mail: [berenice@portoweb.com.br](mailto:berenice@portoweb.com.br)

John R. Diehl, PhD  
Clemson University  
Dept. Animal & Veterinary Sciences  
149 Poole Agric. Center  
Clemson, SC 29634-0361 USA  
Tel: +1-864-656-5166  
Fax: +1-864-656-3131  
E-mail: [jrdiehl@clemson.edu](mailto:jrdiehl@clemson.edu)

András Dinnyés, DVM, PhD, DSc  
Hungarian Academy of Sciences  
Páter K. u.l., Gödöllő, H-2103 Hungary  
Tel: +36-1-320-6646  
Fax: +36-28-521-149  
E-mail: [andrasdinnyes@netscape.net](mailto:andrasdinnyes@netscape.net)

Barbara S. Durrant, Ph.D.  
Center for Reproduction of Endangered  
Species  
Zoological Society of San Diego  
P.O. Box 120551, San Diego, CA 92112-  
0551  
Tel: +1-619-557-3947  
Fax: +1-619-557-3959  
E-mail: [bdurrant@ucsd.edu](mailto:bdurrant@ucsd.edu);  
[bdurrant@sandiegozoo.org](mailto:bdurrant@sandiegozoo.org)

Dr. Klaus Eulenberger  
Zoologischer Garten  
D-0415 Leipzig  
Balzacstr. 15  
Leipzig, Germany  
Tel: +49-341-593-3500  
Fax:  
E-mail:  
[KUKEULENBERGER@T-ONLINE.DE](mailto:KUKEULENBERGER@T-ONLINE.DE)

Diego Ezcurra, DMV  
Ezcurra Transferencias Embryonarias  
Av. Sante Fe 1159 – 2° “d”  
(1059) Buenos Aires, Argentina  
Tel: +54-11-4812-2077  
Fax: +54-11-4812-2077  
E-mail: [ezcurraembryos@infovia.com.ar](mailto:ezcurraembryos@infovia.com.ar)

Wenche Farstad, DVM, PhD  
NSVS, POB 8146 Rep  
N-0033, Ozlo Norway  
Tel: +47-2296-4855  
Fax: +47-2259-7081  
E-mail: [Wenche.Farstad@veths.no](mailto:Wenche.Farstad@veths.no)

Dr. Richard Fayrer-Hosken  
University of Georgia  
Dept. Large Animal Medicine  
College of Veterinary Medicine  
Athens, GA 30602  
Tel: +1-706-542-6326  
Fax: +1-706-542-8833  
E-mail: [rfh@vet.uga.edu](mailto:rfh@vet.uga.edu)

Robert A. Godke, PhD  
Department of Animal Science  
Louisiana State University  
JB Franconi Jr Hall  
Baton Rouge, LA 70803  
Tel: +1-225-388-3444  
Fax: +1-225-388-3279  
E-mail: [rgodke@agctr.lsu.edu](mailto:rgodke@agctr.lsu.edu)

Martha Gómez, DVM, PhD  
AICRES  
14001 River Road  
New Orleans, LA 70131  
Tel: +1-504-398-3159  
Fax: +1-504-398-3100  
E-mail: [mgomez@acres.org](mailto:mgomez@acres.org)

Karen Goodrowe, PhD  
General Curator  
Point Defiance Zoo and Aquarium  
5400 North Pearl Street  
Tacoma, WA  
Tel: 253-404-3680  
Fax: 253-591-5448  
E-mail: [kareng@tacomaparks.com](mailto:kareng@tacomaparks.com)

Monica L. Hall-Woods, PhD  
Research Department  
St. Louis Zoological Park  
Forest Park, 1 Government Drive  
St. Louis, MO 63110 USA  
Tel: +1-314-781-0900, ext 384  
E-mail: [hallwoods@stlzoo.org](mailto:hallwoods@stlzoo.org)

Rebecca Harris  
AICRES  
14001 River Road  
New Orleans, LA 70131  
Tel: +1-504-398-3150  
Fax: +1-504-398-3100  
E-mail: [Rebeccaharris@aol.com](mailto:Rebeccaharris@aol.com)

Jason Herrick, PhD Candidate  
Department of Animal Sciences  
Purdue University  
West Lafayette, IN 47907  
Tel: +1-765-494-4823  
Fax: +1-765-494-9346  
E-mail: [jherrick@purdue.edu](mailto:jherrick@purdue.edu)

Thomas Hildebrandt, DVM, PhD  
Inst. Zoo Biology & Wildlife Research  
Alfred-Kowalke-Strasse 17, Germany  
Tel: +49-30-5168-209  
Fax: +49-30-5126-104  
E-mail: [hildebrand@izw-berlin.de](mailto:hildebrand@izw-berlin.de)

William V. Holt, PhD  
Institute of Zoology,  
Regent's Park  
London NW1 4RY United Kingdom  
Tel: +44-207-449-6630  
Fax: +44-207-586-2870  
E-mail: [Bill.Holt@ioz.ac.uk](mailto:Bill.Holt@ioz.ac.uk)

Duane C. Kraemer, DVM, PhD  
Texas A & M University  
Dept. Vet. Physiol. & Pharmacol.  
College of Veterinary Medicine  
College Station, TX 77843  
Tel: +1-409-862-8469  
Fax: +1-409-845-5760  
E-mail: [dkraemer@cvm.tamu.edu](mailto:dkraemer@cvm.tamu.edu)

Rebecca L. Krisher, PhD  
Department of Animal Sciences  
Purdue University  
West Lafayette, IN 47907  
Tel: +1-765-494-4823  
Fax: +1-765-494-9346  
E-mail: [rkrisher@purdue.edu](mailto:rkrisher@purdue.edu)

Brad Lindsey, PhD  
AB Technology, Inc.  
WSU Center of Repro Biol  
NE 1335 Terre View Dr.  
Pullman, WA 99163  
Tel: +1-509-335-4047  
Fax: +1-509-335-1064  
E-mail: [blindsey@abtechnology.com](mailto:blindsey@abtechnology.com)

Naida M. Loskutoff, PhD  
Center for Conservation & Research  
Henry Doorly Zoo  
3701 South 10<sup>th</sup> Street  
Omaha, NE 68107-2200  
Tel: +1-402-738-2008  
Fax: +1-402-733-0490  
E-mail: [NaidaL@omahazoo.com](mailto:NaidaL@omahazoo.com)

R. Luzbel Jebsoth  
UNLP, Colle 60, 118  
La Plata, Argentina  
Tel: +54-221-423-6663, ext 457  
E-mail: [luzbel@rcv.unlp.edu.ar](mailto:luzbel@rcv.unlp.edu.ar)

Weizhi Ji, Professor  
Director, Kunming Institute of Zoology  
32 Jiaochang Donglu  
Kunming, Yunnan 650223 P.R. China  
Tel: +86-871-514-9413  
Fax: +86-871-515-1823  
E-mail: [wji@ms.kmb.ac.cn](mailto:wji@ms.kmb.ac.cn)

Gaia Cecilia Luvoni  
Inst. Clinica Ostetrica Veterinaria  
Via Celoria 10  
Milan 20133 Italy  
Tel: +39-02-70600154  
Fax: +39-02-236-7788  
E-mail: [gcluvoni@mailserver.unimi.it](mailto:gcluvoni@mailserver.unimi.it)

Reuben Mapletoft, DVM, PhD  
University of Saskatchewan  
52 Campus Drive  
Saskatoon, SK Canada  
Tel: +1-306-966-7149  
Fax: +1-306-966-7159  
E-mail: [reuben.mapletoft@usask.ca](mailto:reuben.mapletoft@usask.ca)



Gabriela Mastromonaco  
University of Guelph  
Dept. Biomedical Sciences  
Guelph, ON N1G 2W1 Canada  
Tel: +1-519-824-4120, ext. 4911  
E-mail: [gmastrom@uoguelph.ca](mailto:gmastrom@uoguelph.ca)

Ronaldo Morato, PhD  
Associação Pró Carnívoros  
Av. Parada Pinto  
3420 12174 S.P. Brazil 02611-900  
Tel: +55-11-6232-6256  
Fax: +55-11-6232-6256  
E-mail: [Ronaldo@procarnivoros.org.br](mailto:Ronaldo@procarnivoros.org.br)

Prof. Nei Moreira, DVM, MSc, PhD  
Federal University of Parana - Palotina  
Campus  
UFPR - Campus Palotina  
Rua Pioneiro, 2153.  
85950-000 Palotina - PR - Brazil  
Tel: (44) 649-5349  
Fax: (44) 649-6616  
E-mail: [moreira@bio.ufpr.br](mailto:moreira@bio.ufpr.br)

Kari Morfeld  
Center for Conservation & Research  
Henry Doorly Zoo  
3701 South 10<sup>th</sup> Street  
Omaha, NE 68107-2200  
Tel: +1-402-733-8401, ext. 5055  
Fax: +1-402-733-0490  
Email: [Repro@omahazoo.com](mailto:Repro@omahazoo.com)

Justine O'Brien, PhD  
University of Sydney  
NSW 2021, Australia  
E-mail: [justineo@vetsci.usyd.edu.au](mailto:justineo@vetsci.usyd.edu.au);

Karine Onclin, DVM, PhD  
University of Liege  
Small Animal Reproduction  
B44, Bd de Colonster 20  
4000 Liege, Belgium  
Tel: +32-4-366-4234  
Fax: +32-4-366-4231  
E-mail: [K.Onclin@ulg.ac.be](mailto:K.Onclin@ulg.ac.be)

Damien Paris, B.Sc. (Hons)  
Ph.D. Candidate  
Reproductive & Molecular Biology  
Department of Zoology  
The University of Melbourne  
Victoria 3010 Australia  
Tel: +61-3-8344-4862  
Fax: +61-3-8344-7909  
E-mail: [d.paris@pgrad.unimelb.edu.au](mailto:d.paris@pgrad.unimelb.edu.au)

Monique C.J. Paris, Ph.D.  
Senior Research Fellow  
Department of Gastroenterology and  
Clinical Nutrition  
Royal Children's Hospital  
Flemington Road Parkville  
Victoria 3052 Australia  
Tel: +613-9345-5069  
Fax: +613-9345-6240  
E-mail:  
[parism@murdoch.rch.unimelb.edu.au](mailto:parism@murdoch.rch.unimelb.edu.au)

Katie Pellican, PhD  
CRC, National Zoo  
1500 Remount Rd.  
Front Royal, VA 22630  
Tel: +1-540-635-6594  
Fax: +1-540-635-6506  
E-mail:

Linda M. Penfold, PhD  
White Oak Conservation Center  
3823 Owens Road  
Yulee, FL 32097 USA  
Tel: +1-904-225-3380  
Fax: +1-904-225-3337  
E-mail: [Lindap@wogilman.com](mailto:Lindap@wogilman.com)

Amanda Pickard, PhD  
Institute of Zoology,  
Regent's Park  
London NW1 4RY United Kingdom  
Tel: +44-207-449-6630  
Fax: +44-207-586-2870  
E-mail: [Amanda.Pickard@ioz.ac.uk](mailto:Amanda.Pickard@ioz.ac.uk)

Earle Pope, PhD  
AICRES  
14001 River Road  
New Orleans, LA 70131  
Tel: +1-504-398-3161  
Fax: +1-504-398-3100  
E-mail: [epope@acres.org](mailto:epope@acres.org)

Cristina Rodriguez  
University of Leon  
Animal Reproduction  
Campus de Vegazana s/n  
24071 Leon, Spain  
Tel: +34-98-729-1417  
Fax: +34-987-291-1322  
E-mail: [dsacre@unileon.es](mailto:dsacre@unileon.es)

Terri Roth, PhD  
CREW, Cincinnati Zoo  
3400 Vine St.  
Cincinnati, OH 45220  
Tel: +1-513-961-2739  
Fax: +1-513-569-8213  
E-mail: [terri.roth@cincyzoo.org](mailto:terri.roth@cincyzoo.org)

Kristin R. Sieren  
University of Missouri-Columbia  
Comparative Medicine Center  
1600 E. Rollins  
Columbia MO 65211  
Tel: +1-573-884-9523  
Fax: +1-573-884-7521  
E-mail: [krs9q3@mizzou.edu](mailto:krs9q3@mizzou.edu)

Laszlo Solti, DVM, PhD  
Faculty of Veterinary Sciences  
H-1400 Budapest  
P.O. Box 2, Hungary  
Tel: +36-1478-4104  
Fax: +36-1478-4105  
E-mail: [lsolti@univet.hu](mailto:lsolti@univet.hu)

Rebecca Spindler, PhD  
CRC, National Zoo  
1500 Remount Rd.  
Front Royal, VA 22630  
Tel: +1-540-635-6594  
Fax: +1-540-635-6506  
E-mail: [rspindler@crc.si.edu](mailto:rspindler@crc.si.edu)

William F. Swanson, DVM, PhD  
CREW, Cincinnati Zoo  
3400 Vine St.  
Cincinnati, OH 45220  
Tel: +1-513-961-2739  
Fax: +1-513-569-8213  
E-mail: [william.swanson@cincyzoo.org](mailto:william.swanson@cincyzoo.org)

John Verstegen, PhD  
EVSSAR, University of Liege  
BD Colonser 20, B44  
B4000 Liege, Belgium  
Tel: +32-436-64236  
Fax: +32-436-64231  
E-mail: [J.Verstegen@ULG.AC.BE](mailto:J.Verstegen@ULG.AC.BE)

Matthew B. Wheeler, PhD  
University of Illinois  
Dept. Animal Sciences  
1207 W. Gregory Drive  
366 Animal Sciences Laboratory  
Urbana, IL 61801 USA  
Tel: +1-217-333-2239  
Fax: +1-333-8286  
E-mail: [mbwheele@uiuc.edu](mailto:mbwheele@uiuc.edu)

Buck Williams  
Texas A & M University  
Dept. Vet. Physiol. & Pharmacol.  
College of Veterinary Medicine  
College Station, TX 77843  
Tel: +1-409-845-9819  
Fax: +1-409-845-5760  
E-mail: [reproag@yahoo.com](mailto:reproag@yahoo.com)

## IX. List of E-mail Addresses

Mercedes Alvarez, PhD  
Luis Anel, PhD  
Dr. Paul Bartels  
Barry D. Bavister, PhD  
Enrico Casadei  
Jackie Coulon  
Elizabeth G. Crichton, PhD  
Elixa Curnow, PhD  
Philip Damiani, PhD  
Berenice de Avila Rodrigues, DVM, MSc  
John R. Diehl, PhD  
Andr s Dinny s, DVM, PhD, DSc  
Barbara Durrant, PhD  
Dr. Klaus Eulenberger  
Diego Ezcurra, DMV  
Wenche Farstad, DVM, PhD  
Dr. Richard Fayrer-Hosken  
Robert A. Godke, PhD  
Martha G mez, DVM, PhD  
Karen Goodrowe, PhD  
Monica Hall-Woods, PhD  
Rebecca Harris  
Jason Herrick, PhD Candidate  
Thomas Hildebrandt, DVM, PhD  
William V. Holt, PhD  
Weizhi Ji, PhD  
Duane C. Kraemer, DVM, PhD  
Rebecca L. Krisher, PhD  
Brad Lindsey, PhD  
Naida M. Loskutoff, PhD  
R. Luzbel Jebson  
Gaia Cecilia Luvoni  
Reuben Mapletoft, DVM, PhD  
Gabriela Mastromonaco  
Ronaldo Morato, PhD  
Kari Morfeld  
Prof. Dr. Mei Moreira  
Justine O'Brien, PhD  
Karine Onclin, DVM, PhD  
Damien Paris, B.Sc. (Hons)  
Monique C.J. Paris, Ph.D  
Linda Penfold, PhD  
Amanda Pickard, PhD  
Earle Pope, PhD  
Cristina Rodriguez  
Terri Roth, PhD  
Kristin R. Sieren  
Laszlo Solti, DVM, PhD  
Rebecca Spindler, PhD  
William F. Swanson, DVM, PhD  
John Verstegen, PhD  
Matthew B. Wheeler  
Buck Williams

[dsanag@unileon.es](mailto:dsanag@unileon.es)  
[dsalar@unileon.es](mailto:dsalar@unileon.es)  
[paulb@wbrc.org.za](mailto:paulb@wbrc.org.za)  
[bbavister@acres.org](mailto:bbavister@acres.org)  
[Enrico.Casadei@FAO.ORG](mailto:Enrico.Casadei@FAO.ORG)  
[lab@acres.org](mailto:lab@acres.org) (attn: Jackie)  
[repro@omahazoo.com](mailto:repro@omahazoo.com)  
[ecurnow@bart.rprc.washington.edu](mailto:ecurnow@bart.rprc.washington.edu)  
[pdamiani@acres.org](mailto:pdamiani@acres.org)  
[berenice@portoweb.com.br](mailto:berenice@portoweb.com.br)  
[jrdiehl@clemson.edu](mailto:jrdiehl@clemson.edu)  
[andrasdinnyes@netscape.net](mailto:andrasdinnyes@netscape.net)  
[bdurrant@ucsd.edu](mailto:bdurrant@ucsd.edu)  
[KUKEULENBERGER@T-ONLINE.DE](mailto:KUKEULENBERGER@T-ONLINE.DE)  
[ezcurraembryos@infovia.com.ar](mailto:ezcurraembryos@infovia.com.ar)  
[Wenche.Farstad@veths.no](mailto:Wenche.Farstad@veths.no)  
[rjh@vet.uga.edu](mailto:rjh@vet.uga.edu)  
[rgodke@agctr.lsu.edu](mailto:rgodke@agctr.lsu.edu)  
[mgomez@acres.org](mailto:mgomez@acres.org)  
[kareng@tacomaparks.com](mailto:kareng@tacomaparks.com)  
[hallwoods@stlzoo.org](mailto:hallwoods@stlzoo.org)  
[Rebeccaharris@aol.com](mailto:Rebeccaharris@aol.com)  
[jherrick@purdue.edu](mailto:jherrick@purdue.edu)  
[hildebrand@izw-berlin.de](mailto:hildebrand@izw-berlin.de)  
[Bill.Holt@ioz.ac.uk](mailto:Bill.Holt@ioz.ac.uk)  
[wji@ms,kmb,ac.cn](mailto:wji@ms,kmb,ac.cn)  
[dkraemer@cvm.tamu.edu](mailto:dkraemer@cvm.tamu.edu)  
[rkrisher@purdue.edu](mailto:rkrisher@purdue.edu)  
[blindsey@abtechnology.com](mailto:blindsey@abtechnology.com)  
[NaidaL@omahazoo.com](mailto:NaidaL@omahazoo.com)  
[luzbel@rcv.unlp.edu.ar](mailto:luzbel@rcv.unlp.edu.ar)  
[gcluvoni@mailserver.unimi.it](mailto:gcluvoni@mailserver.unimi.it)  
[reuben.mapletoft@usask.ca](mailto:reuben.mapletoft@usask.ca)  
[gmastrom@uoguelph.ca](mailto:gmastrom@uoguelph.ca)  
[Ronaldo@procarnivoros.org.br](mailto:Ronaldo@procarnivoros.org.br)  
[Repro@omahazoo.com](mailto:Repro@omahazoo.com)  
[moreira@bio.ufpr.br](mailto:moreira@bio.ufpr.br)  
[justineo@vetsci.usyd.edu.au](mailto:justineo@vetsci.usyd.edu.au)  
[K.Onclin@ulg.ac.be](mailto:K.Onclin@ulg.ac.be)  
[d.paris@pgrad.unimelb.edu.au](mailto:d.paris@pgrad.unimelb.edu.au)  
[parism@murdoch.rch.unimelb.edu.au](mailto:parism@murdoch.rch.unimelb.edu.au)  
[Lindap@wogilman.com](mailto:Lindap@wogilman.com)  
[Amanda.Pickard@ioz.ac.uk](mailto:Amanda.Pickard@ioz.ac.uk)  
[epope@acres.org](mailto:epope@acres.org)  
[dsacre@unileon.es](mailto:dsacre@unileon.es)  
[terri.roth@cincyzoo.org](mailto:terri.roth@cincyzoo.org)  
[krs9q3@mizzou.edu](mailto:krs9q3@mizzou.edu)  
[lsolti@univet.hu](mailto:lsolti@univet.hu)  
[rspindler@crc.si.edu](mailto:rspindler@crc.si.edu)  
[william\\_swanson@cincyzoo.org](mailto:william_swanson@cincyzoo.org)  
[J.Verstegen@ULG.AC.BE](mailto:J.Verstegen@ULG.AC.BE)  
[mbwheele@uiuc.edu](mailto:mbwheele@uiuc.edu)  
[reproag@yahoo.com](mailto:reproag@yahoo.com)

## **Appendix A**

### **INTERNATIONAL EMBRYO TRANSFER SOCIETY (IETS)**

<p style="text-align: center;"><b>TERMS OF REFERENCE</b></p> <p style="text-align: center;"><b>OF THE</b></p> <p style="text-align: center;"><b>IETS PARENT COMMITTEE ON</b></p> <p style="text-align: center;"><b>COMPANION ANIMALS, NON-DOMESTIC &amp; ENDANGERED SPECIES (CANDES)</b></p>
--

#### **I. PREAMBLE**

The Parent Committee on Companion Animals, Non-Domestic and Endangered Species (CANDES) of the International Embryo Transfer Society is an advisory committee, technically specialized in comparative reproductive physiologies and the application of reproductive biotechnologies in companion animals (including cats, dogs, birds, amphibian, reptiles, fish and invertebrates and excluding domestic horses), non-domestic species (including farmed animals such as buffalo, cervids, camelids, ratites and canids, in addition to a diverse array of zoo animals) as well as their endangered species counterparts. It will provide a unique and valuable resource to the IETS membership and will respond to their questions and requests for advice related to those matters both at a national and international level. It will submit recommendations based on current scientific knowledge to the IETS Board of Governors to further provide guidance and advice to international governmental regulatory agencies, recognized animal specialty groups and organized conservation programs, such as those of regional zoo associations as well as the World Conservation Union (IUCN) by direct liaison with the Conservation Breeding Specialist Group, Species Survival Commission.

#### **II. MISSION STATEMENT**

The aim of the IETS CANDES Parent Committee is to serve as an informational resource pertaining to the management of reproduction in companion animals and non-domestic species in order to provide a foundation for the safe (from a disease standpoint) and effective application of assisted reproductive technologies. An objective of the Committee will also be to provide the IETS membership informed counsel that can instruct and advise on the technical feasibility and realistic expectations (based on previous scientific evidence) of the application of some of the more basic to the most technically advanced reproductive biotechnologies to companion animals, non-domestic and endangered species. An important goal of this Committee is to assist in the understanding of the unique reproductive strategies of those species and to facilitate the application of assisted reproductive technology to these species. The IETS CANDES Parent Committee will regularly communicate their activities to the IETS Board of Governors in the form of written reports and, with Board approval, will relate information directly to the IETS membership.

#### **III. SCOPE**

The activities of IETS CANDES Parent Committee will be wide ranging and will: 1) summarize the results of previous applications of assisted reproductive techniques in companion animals, non-domestic and endangered species and provide details for proven and established protocols; 2) develop and provide instructional information (including thorough reference lists) on the reproductive patterns and strategies of unique species and methods to manage their reproduction; 3) identify areas in need of further research

and development to allow the application of embryo transfer and related technologies to unique species; 4) clearly define international regulatory requirements to provide guidance for the safe and legal transport of tissues and germplasm from companion animals, non-domestic and endangered species for breeding or research purposes; and 5) develop, with approval of the IETS Board of Governors, an electronic system or IETS website link that would transfer pertinent information to the IETS membership.

#### **IV. STRUCTURE**

The IETS CANDES Parent Committee will be organized as four Subcommittees:

1. Regulatory Subcommittee. Besides the health and safety concerns when transporting animal tissues, those who work with rare and endangered species have additional restrictions by federal (e.g., United States Fish and Wildlife Department) and international (e.g., CITES, Convention on International Trade of Endangered Species) agencies which are often ill-defined and inconsistent between countries. An important objective of this Subcommittee is to assist in clearly defining conditions and requirements to facilitate and expedite the safe and legal transport of biological materials, while at the same time holding high standards to minimize the potential of inadvertent disease transmission, without unduly restricting technological advances in research and conservation programs. The information will be compiled, organized and made available to the IETS membership through the IETS website or FASS office.

2. Research Subcommittee. The initial objective of this committee will be to compile information on existing protocols proven to be effective for synchronizing ovarian cycles, artificial insemination, embryo collection, production and transfer, as well as sperm and embryo cryopreservation in these species. This information will be compiled for a diverse array of taxa, with updates and new additions included on a regular basis, and written reports will be made available to IETS members through the IETS website or FASS office. A future objective of this Subcommittee will be to identify and prioritize critical areas in need of research to develop protocols for embryo transfer and related technologies in companion animals, non-domestic and endangered species. This information will be made available to research programs to draw upon.

3. Technology Subcommittee. The goal of this Subcommittee is to identify and prioritize important areas that need technological development to broaden the application of embryo transfer and related technologies in companion animals, non-domestic and endangered species.

4. Health & Safety Subcommittee. This Subcommittee will serve several important purposes including: 1) review literature on embryo and pathogen interactions in companion animals, non-domestic and endangered species (which is quite limited at present) and report these to the HASAC Research Subcommittee; and 2) review literature and identify studies on pathogen interactions with semen in all species and report these to the HASAC Research Subcommittee.

#### **V. APPOINTMENT AND PROCESS**

The IETS CANDES Parent Committee will be led by a Chairman nominated from the IETS membership by the IETS Board of Governors. The continuation of the appointment will be subject to approval of the IETS Board of Governors after review every two years and renewable for a total of six years. The CANDES Parent Committee Chairman will designate a Secretary from the IETS membership, who will be confirmed by the IETS Board of Governors and whose appointment will be reviewed by the CANDES Parent Committee every two years and renewable for a total of six years. Each of the four Subcommittees will be led initially by two Co-Chairmen, designated by the CANDES Parent Committee

Chairman from the IETS membership and confirmed by the IETS Board of Governors. The Subcommittee Co-Chairmen will serve for a period of two years, renewable for a total of six years by agreement of the CANDES Parent Committee and confirmation by the IETS Board of Governors. The Subcommittee Chairmen will select the members of their respective subcommittees, drawn from the IETS membership, whose appointments will be subject to review by the Subcommittee Chairmen every two years, renewable for a total of six years. The IETS CANDES Parent Committee will, therefore, consist of a Chairman, Secretary, Subcommittee Chairmen and all of the Subcommittee members.

All members of the IETS CANDES Parent Committee will be required to be members of the IETS and to volunteer their participation without any remuneration. Their membership will be approved formally by a letter from the IETS CANDES Parent Committee Chairman. To the extent possible, the IETS CANDES Parent Committee membership will be balanced between geographic areas and continents, between public and private sectors and between various fields of expertise: scientists, practitioners, administration, commerce, etc.

## **VI. SUPPORTING STRUCTURE**

The IETS CANDES Parent Committee is an instrument of the IETS Board of Governors to which it reports to after each of its meetings. No public action or initiative of the IETS CANDES Parent Committee can be taken without the approval of the President of the IETS Board of Governors. Internal communication to the IETS membership is the responsibility of the IETS CANDES Parent Committee Chairman, after receiving approval from the IETS Board of Governors. All members, including the Secretary and Subcommittee Chairmen, will communicate information on behalf of the IETS CANDES Parent Committee only with the formal approval of the IETS CANDES Parent Committee Chairman. External communication is the privilege of the IETS Board of Governors. Only the IETS CANDES Parent Committee Chairman communicates externally and that with the formal approval of the President of the IETS Board of Governors.

## **VII. FREQUENCY AND LOCATION OF MEETINGS**

The IETS CANDES Parent Committee will meet at least once annually at the time and location of the IETS annual conferences. A second meeting will be scheduled each year to accelerate consultations and to respond efficiently to inquiries from the IETS membership and others. The second meeting will be organized as a working meeting that will be held in association with the International Symposium on Assisted Reproductive Technology for the Conservation and Genetic Management of Wildlife. The working meeting will overlap with the annual working meeting of the Reproductive Sciences Advisory Group of the American Zoo and Aquarium Association (AZA). The programs for these symposia will be designed to reflect the interests of both groups. IETS CANDES Parent Committee members will be urged to form associations with their own regional zoo associations worldwide and to encourage their participation in the Wildlife ART Symposia and joint working group meetings.

## **VIII. SUPPORT**

The IETS Business Office will be requested only to relay communications between the IETS CANDES Parent Committee and the IETS Board of Governors. In addition, the IETS Business Office will be requested to communicate Board-approved information to the IETS membership by way of the Embryo Transfer Newsletter or the IETS website. A modest budget allocation will be requested from the IETS to assist CANDES Parent Committee members with travel expenses to attend an annual working meeting (which will be in addition to the annual meeting held in conjunction with the IETS annual conferences).

## Appendix B

### The IETS CANDES Regulatory Subcommittee Rules and Regulations for import and export of biological materials – sample document

#### 1. Import rules and regulations:

Import requirements for Australia	Details
1. Government and organisation agencies requiring permits/approval to import	<p>Separate permission is required from:</p> <ul style="list-style-type: none"> <li>• AQIS (Australian Quarantine Inspection Service).</li> <li>• EA (Environment Australia Biodiversity Group; under the Wildlife Protection (Regulation of Exports and Imports) Act 1982). EA is the Australian CITES Authority, providing CITES permits.</li> <li>• For specimens from CITES listed species, export approval is required from the country of export (For example from the appropriate department within the zoo and from the CITES Authority of the export country)</li> </ul>
2. Government agency contact details of departments/personnel	<ul style="list-style-type: none"> <li>• AQIS: Biologicals Unit Ph: + 61 2 6272 4578, Fax: + 61 2 6273 2097, Website: <a href="http://www.affa.gov.au">http://www.affa.gov.au</a>,</li> <li>• EA: Live and scientific permits: Alex Rankin, Director, Wildlife Science and Management Ph: + 61 2 6274 2880, Fax: 02 6274 1921, E-mail: <a href="mailto:alex.rankin@ea.gov.au">alex.rankin@ea.gov.au</a>, Website: <a href="http://www.ea.gov.au/">http://www.ea.gov.au/</a></li> </ul>
3. Specimen types requiring import permits	<p>Animal products: gametes, embryos, tissue, blood, faeces, saliva, urine, hair, feathers Biological materials: vaccines, certain drugs For more details refer to the AQIS import conditions database: <a href="http://www.aqis.gov.au/ICON">http://www.aqis.gov.au/ICON</a></p>
4. Specimen types not requiring import permits	
5. Specific specimen processing requirements	<p>Refer to AQIS import conditions database: <a href="http://www.aqis.gov.au/ICON">http://www.aqis.gov.au/ICON</a> Processing and permit requirements are dependent on:</p> <ul style="list-style-type: none"> <li>• Volume of the product being imported. For example, vials/tubes containing 20mls or 20gms of biological material are generally considered low risk and have less stringent conditions.</li> <li>• Prevalence of exotic diseases of concern from the country of export</li> </ul>
6. Specific requirements of the organisation importing the specimen(s)	<p>For Australian and/or CITES listed fauna, the organisation importing the specimen(s) must be recognised as a “prescribed scientific organisation” by EA. An application form (endorsed by the head of the organisation) must be submitted with supplementary information on the proposed research program (including 1-2 relevant publications) illustrating that personnel and facilities available will enable the organisation to carry out the research on the proposed species.</p>
7. Veterinary certificates required	<p>For example, non-human primate semen samples must be accompanied by a certificate by an Official Veterinarian of the country of export certifying that:</p> <ul style="list-style-type: none"> <li>• The donor primate was either (i) tested for tuberculosis within the six months preceding the collection of semen for export, using an approved test, with negative results <u>or</u> (ii) submitted to a thoracic radiograph within the six months preceding the collection of semen, which showed no evidence of tuberculosis.</li> <li>• Donor primate was examined within 7 days prior to the collection of semen. The donor animal did not show any sign of infectious or contagious disease.</li> </ul>
8. Import permit application forms	Forms can be downloaded from the AQIS and EA websites.

## 2. Export rules and regulations:

Export requirements for Australia	Details
1. Government and organisation agencies requiring permits/approval to export	Separate permission is required from: <ul style="list-style-type: none"> <li>• AQIS (Australian Quarantine Inspection Service).</li> <li>• EA (Environment Australia Biodiversity Group; under the Wildlife Protection (Regulation of Exports and Imports) Act 1982). EA is the Australian CITES Authority, providing CITES permits.</li> <li>• Approval from the head of the organisation exporting the specimen (eg Director of the Zoological Institution) - check</li> </ul>
2. Government agency contact details of departments/personnel	AQIS: Biologicals Unit <ul style="list-style-type: none"> <li>• Ph: + 61 2 6272 4578, Fax: + 61 2 6273 2097, Website: <a href="http://www.affa.gov.au">http://www.affa.gov.au</a>,</li> <li>• EA: Live and scientific permits: Alex Rankin, Director, Wildlife Science and Management</li> <li>• Ph: + 61 2 6274 2880, Fax: 02 6274 1921, E-mail: <a href="mailto:alex.rankin@ea.gov.au">alex.rankin@ea.gov.au</a>, Website: <a href="http://www.ea.gov.au/">http://www.ea.gov.au/</a></li> </ul>
3. Specimen types requiring export permits	Animal products: gametes, embryos, tissue, blood, faeces, saliva, urine, hair, feathers Biological materials: vaccines, certain drugs Refer to AQIS export conditions database: need to check if there is a website for this
4. Specimen types not requiring export permits	
5. Specific specimen processing requirements	Processing requirements vary depending on requirements of the country of import.
6. Specific requirements of the organisation exporting the specimen(s)	For Australian and/or CITES listed fauna, the organisation exporting the specimen(s) must be recognised as a “prescribed scientific organisation” by EA. An application form must be submitted with supplementary information on the proposed research program (including 1-2 relevant publications) illustrating that personnel and facilities available will enable the organisation to carry out the research on the proposed species.
7. Veterinary certificates required	Certificate details vary depending on the country of import. Generally, export specimens must be accompanied by a certificate by an Official Veterinarian of the country of export certifying that they have been tested for diseases etc.
8. Export permit application forms	Forms can be downloaded from the AQIS and EA websites.