This material is based upon work supported by the National Science Foundation under Grant Nos. 0323553 and 0323596.
# Collaborators

**Title:**
The Babase Pocket Reference Guide

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<td>Written by</td>
<td>Karl O. Pinc, PhD. Jeanne Altmann, PhD. Susan C. Alberts, and Leah Gerber</td>
<td>February 28, 2018</td>
</tr>
<tr>
<td>ER Diagram layout and conversion to Dia</td>
<td>Leah Gerber</td>
<td>February 28, 2018</td>
</tr>
<tr>
<td>DocBook formatting</td>
<td>Anne Hubbard</td>
<td>February 28, 2018</td>
</tr>
<tr>
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# Revision History

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Query Defining the SWERB_UPLOAD View

Entity Relationship Diagram of the SWERB_UPLOAD View

Query Defining the ULNA_STATS View

Entity Relationship Diagram of the ULNA_STATS View

Query Defining the TESTES_ARC_STATS View

Entity Relationship Diagram of the TESTES_ARC_STATS View

Query Defining the TESTES_DIAM_STATS View

Entity Relationship Diagram of the TESTES_DIAM_STATS View

Query Defining the BIRTH_GRP View

Entity Relationship Diagram of the BIRTH_GRP View

Query Defining the ENTRYDATE_GRP View

Entity Relationship Diagram of the ENTRYDATE_GRP View

Query Defining the STATDATE_GRP View

Entity Relationship Diagram of the STATDATE_GRP View

Query Defining the CONSORTDATES_GRP View

Entity Relationship Diagram of the CONSORTDATES_GRP View

Query Defining the CYCGAPDAYS_GRP View

Entity Relationship Diagram of the CYCGAPDAYS_GRP View

Query Defining the CYCGAPS_GRP View

Entity Relationship Diagram of the CYCGAPS_GRP View

Query Defining the CYCSTATS_GRP View

Entity Relationship Diagram of the CYCSTATS_GRP View

Query Defining the DARTINGS_GRP View

Entity Relationship Diagram of the DARTINGS_GRP View

Query Defining the DISPERSEDATES_GRP View

Entity Relationship Diagram of the DISPERSEDATES_GRP View

Query Defining the MATUREDATES_GRP View

Entity Relationship Diagram of the MATUREDATES_GRP View

Query Defining the MDINTERVALS_GRP View

Entity Relationship Diagram of the MDINTERVALS_GRP View

Query Defining the MMINTERVALS_GRP View

Entity Relationship Diagram of the MMINTERVALS_GRP View

Query Defining the PCSKINS_GRP View

Entity Relationship Diagram of the PCSKINS_GRP View

Query Defining the RANKDATES_GRP View

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1 Babase Summarized

**Warning**
Tables which have names ending in "_DATA" should not be used, there is always a view of the data in these tables that may be used in their place. Tables ending in "_DATA" may change in future Babase minor releases, breaking queries and programs which use the table. Use of the corresponding views will ensure compatibility with future Babase releases.

2 The Babase ER Diagrams

The BABASE Database

Figure 1: Key to the Babase Entity Relationship Diagrams

\[\text{[Diagram of Babase ER Diagrams]}\]

1 At this time of this writing only males have data entered into RANKDATES in Babase.
<table>
<thead>
<tr>
<th>Group Membership and Life Events</th>
<th>Table</th>
<th>One row for each</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALTERNATE_SNAMES</strong> in Babase:</td>
<td>rescinded sname</td>
<td></td>
</tr>
<tr>
<td><strong>BIOGRAPH</strong> in Babase:</td>
<td>animal, including fetuses</td>
<td></td>
</tr>
<tr>
<td><strong>CENSUS</strong> in Babase:</td>
<td>day each individual is (or is not) observed in a group</td>
<td></td>
</tr>
<tr>
<td><strong>CONSORTDATES</strong> in Babase:</td>
<td>male who has a known first consortship</td>
<td></td>
</tr>
<tr>
<td><strong>DEMOG</strong> in Babase:</td>
<td>mention of an individual's presence in a group within a field textual note</td>
<td></td>
</tr>
<tr>
<td><strong>DISPERSEDATES</strong> in Babase:</td>
<td>male who has left his maternal study group</td>
<td></td>
</tr>
<tr>
<td><strong>GROUPS</strong> in Babase:</td>
<td>group (including solitary males)</td>
<td></td>
</tr>
<tr>
<td><strong>MATUREDATES</strong> in Babase:</td>
<td>individual who is sexually mature</td>
<td></td>
</tr>
<tr>
<td><strong>RANKDATES</strong> in Babase:</td>
<td>individual(^1) who has attained adult rank</td>
<td></td>
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</table>

<table>
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<tr>
<th>Analyzed: Group Membership and Life Events</th>
<th>Table</th>
<th>One row for each</th>
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<tr>
<td><strong>DAD_DATA</strong> in Babase:</td>
<td>offspring having a paternity analysis</td>
<td></td>
</tr>
<tr>
<td><strong>MEMBERS</strong> in Babase:</td>
<td>day each individual is alive</td>
<td></td>
</tr>
<tr>
<td><strong>RANKS</strong> in Babase:</td>
<td>month each individual is ranked in each group</td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<th>Sexual Cycles</th>
<th>Table</th>
<th>One row for each</th>
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</thead>
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<tr>
<td><strong>CYCGAPS</strong> in Babase:</td>
<td>female for each initiation or cessation of a continuous period of observation</td>
<td></td>
</tr>
<tr>
<td><strong>CYCLES</strong> in Babase:</td>
<td>female's cycle (complete or not)</td>
<td></td>
</tr>
<tr>
<td><strong>CYCPOINTS</strong> in Babase:</td>
<td>Mdate (menses), Tdate (turgesence onset), or Ddate (deturgesence onset) date of each female</td>
<td></td>
</tr>
<tr>
<td><strong>PCSkins</strong> in Babase:</td>
<td>PCS color of each female</td>
<td></td>
</tr>
<tr>
<td><strong>PREGS</strong> in Babase:</td>
<td>time a female becomes pregnant</td>
<td></td>
</tr>
<tr>
<td><strong>SEXSKINS</strong> in Babase:</td>
<td>sexskin measurement of each female</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Sexual Cycle Day-By-Day Tables</th>
<th>Table</th>
<th>One row for each</th>
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<tr>
<td><strong>CYCGAPDAYS</strong> in Babase:</td>
<td>female for each day within a period during which there is not continuous observation</td>
<td></td>
</tr>
<tr>
<td><strong>CYCSTATS</strong> in Babase:</td>
<td>day each female is cycling -- by M, T and Ddates</td>
<td></td>
</tr>
<tr>
<td><strong>MDINTERVALS</strong> in Babase:</td>
<td>day each female is cycling and is between M and Ddates</td>
<td></td>
</tr>
<tr>
<td><strong>MMINTERVALS</strong> in Babase:</td>
<td>day each female is cycling -- by Mdates</td>
<td></td>
</tr>
<tr>
<td><strong>REPISTATS</strong> in Babase:</td>
<td>day each female has a known reproductive state</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social and Multiparty Interactions</th>
<th>Table</th>
<th>One row for each</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALLMISCS</strong> in Babase:</td>
<td>&quot;free form&quot; all-occurrences datum</td>
<td></td>
</tr>
<tr>
<td><strong>CONSORTS</strong> in Babase:</td>
<td>multiparty dispute over a consortship</td>
<td></td>
</tr>
<tr>
<td><strong>FPPOINTS</strong> in Babase:</td>
<td>point observation of a mature female</td>
<td></td>
</tr>
<tr>
<td><strong>INTERACT_DATA</strong> in Babase:</td>
<td>interaction between individuals</td>
<td></td>
</tr>
<tr>
<td><strong>MPIS</strong> in Babase:</td>
<td>collection of multiparty interactions</td>
<td></td>
</tr>
<tr>
<td><strong>MPL_DATA</strong> in Babase:</td>
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</table>
Table 2: The Warning Sub-System Tables

<table>
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<tr>
<th>Table</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEGRITY_QUERIES in Babase:</td>
<td>query used to discover data integrity problems</td>
</tr>
<tr>
<td>INTEGRITY_WARNINGS in Babase:</td>
<td>data integrity problem discovered by the warning sub-system</td>
</tr>
</tbody>
</table>

Figure 2: Babase Group Membership Entity Relationship Diagram
### General Support Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Id Column</th>
<th>Related Column(s)</th>
<th>One entry for every possible choice of...</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBSERVERS in Babase:</td>
<td>Initials</td>
<td>SAMPLES in Babase::Observer in Babase::WREADINGS in Babase::WRperson in Babase:: RGSETUPS in Babase::RGSPerson in Babase::PCSKINS in Babase::CROWNRRUMPS in Babase::CRObserver in Babase::CHESTS in Babase::CObserver in Babase::ULNAS in Babase::Uloobserver in Babase::HUMERUSES in Babase::Huobserver in Babase::SWERB_OBSERVERS in Babase::Observer in Babase::</td>
<td>person who records information</td>
</tr>
<tr>
<td>OBSERVER_ROLEs in Babase:</td>
<td>Initials</td>
<td>OBSERVERS in Babase::Role in Babase::OBSERVERS in Babase::SWERB_Observer_Role in Babase::OBSERVERS in Babase::SWERB_Driver_Role in Babase::SWERB_OBSERVERS in Babase::</td>
<td>way in which a person can be involved in the data collection process</td>
</tr>
<tr>
<td>UNKS NAMES in Babase:</td>
<td>Unksname</td>
<td>NEIGHBORS in Babase::Unksname in Babase:: and the SWERB_UPLOAD in Babase::view</td>
<td>problem in identifying neighbor of focal during point sampling or in identifying a lone male in a SWERB other group observation</td>
</tr>
</tbody>
</table>

### Group Membership and Life Events

<table>
<thead>
<tr>
<th>Table</th>
<th>Id Column</th>
<th>Related Column(s)</th>
<th>One entry for every possible choice of...</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSTATUSES in Babase:</td>
<td>Bstatus</td>
<td>BIOGRAPH in Babase::Bstatus in Babase::</td>
<td>birthday estimation accuracy</td>
</tr>
<tr>
<td>CONFIDENCES in Babase:</td>
<td>Confidence</td>
<td>BIOGRAPH in Babase::DecauseNatureConfidence in Babase:: BIOGRAPH in Babase::DecauseAgentConfidence in Babase:: DISPERSEDATES in Babase::DISPERSEconfidenc in Babase:: BIOGRAPH in Babase::BIOGRAph in Babase::Matgrpconfidence in Babase::</td>
<td>degree of certitude in nature of death, agent of death, disperse date assignment, or maternal group assignment</td>
</tr>
<tr>
<td>DAD SOFTWARE in Babase:</td>
<td>Software</td>
<td>DAD_DATA in Babase::Software in Babase::</td>
<td>software package used to perform genetic paternity analysis</td>
</tr>
<tr>
<td>DCAUSES in Babase:</td>
<td>Dcause</td>
<td>BIOGRAPH in Babase::Dcause in Babase::</td>
<td>cause of death</td>
</tr>
<tr>
<td>DEATH NATURES in Babase:</td>
<td>Nature</td>
<td>DCAUSES in Babase::Nature in Babase::</td>
<td>reason for death</td>
</tr>
<tr>
<td>DEMOG REFERENCES in Babase:</td>
<td>Reference</td>
<td>DEMOG in Babase::Reference in Babase::</td>
<td>data source for demography notes</td>
</tr>
<tr>
<td>MSTATUSES in Babase:</td>
<td>Mstatus</td>
<td>Babase::Matured in Babase::RANKDATES in Babase::Ranked in Babase::</td>
<td>maturity marker date estimation process</td>
</tr>
<tr>
<td>PATERNITY MISMATCHES in Babase:</td>
<td></td>
<td>DAD_DATA in Babase::</td>
<td></td>
</tr>
</tbody>
</table>
Table 4: The Warning Sub-System Support Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Id Column</th>
<th>Related Column(s)</th>
<th>One entry for every possible choice of...</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQTYPES in Babase:</td>
<td>IQType</td>
<td>INTEGRITY_QUERIES in Babase: Type in Babase:</td>
<td>kind of problem with data integrity</td>
</tr>
<tr>
<td>WARNING_REMARKS in Babase:</td>
<td>WRID</td>
<td>INTEGRITY_WARNINGS in Babase: Category in Babase:</td>
<td>remark which might apply to more than one instance of questionable database integrity</td>
</tr>
</tbody>
</table>

Figure 3: Babase Life Events Entity Relationship Diagram
### Group Membership and Life Events

<table>
<thead>
<tr>
<th>View</th>
<th>Purpose</th>
<th>Tables/Views used</th>
</tr>
</thead>
<tbody>
<tr>
<td>CENUS_DEMOG in Babase:</td>
<td>Maintenance of CENUS in Babase: rows that are extended with DEMOG in Babase: information.</td>
<td>CENUS in Babase:, DEMOG in Babase:</td>
</tr>
<tr>
<td>CENUS_DEMOG_SORTED in Babase:</td>
<td>Maintenance of CENUS_DEMOG in Babase: rows in a pre-sorted fashion.</td>
<td>CENUS in Babase:, DEMOG in Babase:</td>
</tr>
<tr>
<td>CYCPOINTS_CYCLES in Babase:</td>
<td>Maintenance of CYCPOINTS in Babase: rows that are extended with CYCLES in Babase: information.</td>
<td>CYCLES in Babase:, CYCPOINTS in Babase:</td>
</tr>
<tr>
<td>CYCPOINTS_CYCLES_SORTED in Babase:</td>
<td>The CYCPOINTS_CYCLES in Babase: view sorted by CYCLES in Babase:.Sname in Babase:, by CYCPOINTS in Babase:.Date in Babase:.</td>
<td>CYCLES in Babase:, CYCPOINTS in Babase:</td>
</tr>
<tr>
<td>DEMOG_CENSUS in Babase:</td>
<td>Maintenance of DEMOG in Babase: rows.</td>
<td>CENUS in Babase:, DEMOG in Babase:</td>
</tr>
<tr>
<td>DEMOG_CENSUS_SORTED in Babase:</td>
<td>Maintenance of DEMOG_CENSUS in Babase: rows in a pre-sorted fashion.</td>
<td>CENUS in Babase:, DEMOG in Babase:</td>
</tr>
<tr>
<td>GROUPS_HISTORY in Babase:</td>
<td>Depiction of GROUPS in Babase: rows in a more human-readable format.</td>
<td>GROUPS in Babase:</td>
</tr>
<tr>
<td>PARENTS in Babase:</td>
<td>Easy access to parental information.</td>
<td>BIOGRAPH in Babase:, MATERNITIES in Babase:, DAD_DATA in Babase:, MEMBERS in Babase:</td>
</tr>
<tr>
<td>POTENTIAL_DADS in Babase:</td>
<td>(completed) female reproductive event for every male more than 2192 days old (approximately 6 years) present in the mother’s group during her fertile period</td>
<td>MATURE-DATES in Babase:, RANK-DATES in Babase:, MATERNITIES in Babase:, MEMBERS in Babase:</td>
</tr>
</tbody>
</table>

### Sexual Cycles

<table>
<thead>
<tr>
<th>View</th>
<th>Purpose</th>
<th>Tables/Views used</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYCLES_SEXSKINS in Babase:</td>
<td>Maintenance of SEXSKINS in Babase: rows.</td>
<td>CYCLES in Babase:, SEXSKINS in Babase:</td>
</tr>
<tr>
<td>Table</td>
<td>View</td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------</td>
<td></td>
</tr>
<tr>
<td>BIOGRAPH in Babase:</td>
<td>BIRTH_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>BIOGRAPH in Babase:</td>
<td>ENTRYDATE_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>BIOGRAPH in Babase:</td>
<td>STATDATE_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>CONSORTDATES in Babase:</td>
<td>CONSORTDATES_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>CYCGAPDAYS in Babase:</td>
<td>CYCGAPDAYS_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>CYCGAPS in Babase:</td>
<td>CYCGAPS_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>CYCSTATS in Babase:</td>
<td>CYCSTATS_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>DARTINGS in Babase:</td>
<td>DARTINGS_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>DISPERSEDATES in Babase:</td>
<td>DISPERSEDATES_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>MATUREREDATES in Babase:</td>
<td>MATUREDATES_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>MDINTERVALS in Babase:</td>
<td>MDINTERVALS_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>MMINTERVALS in Babase:</td>
<td>MMINTERVALS_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>PCSKINS in Babase:</td>
<td>PCSKINS_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>RANKDATES in Babase:</td>
<td>RANKDATES_GRP in Babase:</td>
<td></td>
</tr>
<tr>
<td>REPSTATS in Babase:</td>
<td>REPSTATS_GRP in Babase:</td>
<td></td>
</tr>
</tbody>
</table>

Table 6: The table_GRP Views
Figure 4: Babase Sexual Cycle Entity Relationship Diagram
Figure 5: Babase Sexual Cycle Day-To-Day Tables Entity Relationship Diagram
Figure 6: Babase Social Interactions Entity Relationship Diagram
Figure 7: Babase Multiparty Interactions Entity Relationship Diagram
Figure 8: Babase Darting Logistics and Morphology Entity and Relationship Diagram
Figure 9: Babase Darting Physiology Entity and Relationship Diagram
Figure 10: Babase Darting Samples Entity and Relationship Diagram
Figure 11: Babase Darting Teeth and Ticks Entity and Relationship Diagram
Figure 12: Babase Hybrid Scores Data Entity Relationship Diagram
Figure 13: Babase SWERB Core Tables Entity Relationship Diagram
Figure 14: Babase SWERB Grove/Waterhole Location Tables Entity Relationship Diagram
Figure 15: Babase Manual Weather Data Entity Relationship Diagram
Figure 16: Babase WeatherHawk Data Entity Relationship Diagram
3 The Babase Views

For information on the operations (INSERT, UPDATE, DELETE) allowed by each view and their actions on the underlying tables see The Babase Views in Babase: of The Babase Reference Manual.
3.1 The ACTOR_ACTEES View

```sql
SELECT interact_data.iid AS iid,
      interact_data.sid AS sid,
      interact_data.act AS act,
      interact_data.date AS date,
      interact_data.start AS start,
      interact_data.stop AS stop,
      interact_data.observer AS observer,
      actor.partid AS actorid,
      COALESCE(actor.sname, '998'::CHAR(3)) AS actor,
      (SELECT actorms.grp
       FROM members AS actorms
       WHERE actorms.sname = actor.sname
       AND actorms.date = interact_data.date) AS actor_grp,
      actee.partid AS acteeid,
      COALESCE(actee.sname, '998'::CHAR(3)) AS actee,
      (SELECT acteems.grp
       FROM members AS acteems
       WHERE acteems.sname = actee.sname
       AND acteems.date = interact_data.date) AS actee_grp,
      interact_data.handwritten AS handwritten
FROM interact_data
LEFT OUTER JOIN parts AS actor
  ON (actor.iid = interact_data.iid AND actor.role = 'R')
LEFT OUTER JOIN parts AS actee
  ON (actee.iid = interact_data.iid AND actee.role = 'E');
```

Figure 18: Query Defining the ACTOR_ACTEES View
3.2 The ANESTH_STATS View

```
SELECT anesths.dartid AS dartid,
       count(*) AS ansamps,
       avg(anesths.anamount) AS anamount_mean,
       stddev(anesths.anamount) AS anamount_stddev
FROM anesths
GROUP BY anesths.dartid;
```

Figure 20: Query Defining the ANESTH_STATS View
3.3 The **BODYTEMP_STATS** View

```
SELECT bodytemps.dartid AS dartid
    , count(*) AS btsamps
    , avg(bodytemps.btemp) AS btemp_mean
    , stddev(bodytemps.btemp) AS btemp_stddev
FROM bodytemps
GROUP BY bodytemps.dartid;
```

Figure 22: Query Defining the BODYTEMP_STATS View
3.4 The CENSUS_DEMOG and CENSUS_DEMOG_SORTED Views

```
SELECT census.cenid AS cenid
    , census.sname AS sname
    , census.date AS date
    , census.grp AS grp
    , census.status AS status
    , census.cen AS cen
    , demog.reference AS reference
    , demog.comment AS comment
FROM census LEFT OUTER JOIN demog ON (census.cenid = demog.cenid);
```

Figure 25: Entity Relationship Diagram of the CENSUS_DEMOG View
3.5 The CHEST_STATS View

SELECT chests.dartid AS dartid
    , count(*) AS chsamps
    , avg(chests.chcircum) AS chcircum_mean
    , stddev(chests.chcircum) AS chcircum_stddev
    , avg(chests.chunadjusted) AS chunadjusted_mean
    , stddev(chests.chunadjusted) AS chunadjusted_stddev
FROM chests
GROUP BY chests.dartid;

Figure 26: Query Defining the CHEST_STATS View

Figure 27: Entity Relationship Diagram of the CHEST_STATS View
3.6 The CROWNRUMP_STATS View

```sql
SELECT crownrumps.dartid AS dartid, count(*) AS crsamps, avg(crownrumps.crlength) AS crlength_mean, stddev(crownrumps.crlength) AS crlength_stddev
FROM crownrumps
GROUP BY crownrumps.dartid;
```

Figure 28: Query Defining the CROWNRUMP_STATS View

![Diagram of CROWNRUMP_STATS View](image)

3.7 The CYCLES_SEXSKINS and CYCLES_SEXSKINS_SORTED Views

```sql
SELECT cycles.cid AS cid, cycles.sname AS sname, cycles.seq AS seq, cycles.series AS series, sexskins.sxid AS sxid, sexskins.date AS date, sexskins.size AS size
FROM cycles LEFT OUTER JOIN sexskins ON (cycles.cid = sexskins.cid);
```

Figure 30: Query Defining the CYCLES_SEXSKINS View
3.8 The CYCPOINTS_CYCLES and CYCPOINTS_CYCLES_SORTED Views

```
SELECT cycles.cid AS cid,
      cycles.sname AS sname,
      cycles.seq AS seq,
      cycles.series AS series,
      cycpoints.cpid AS cpid,
      cycpoints.date AS date,
      cycpoints.edate AS edate,
      cycpoints.ldate AS ldate,
      cycpoints.code AS code,
      cycpoints.source AS source
FROM cycles, cycpoints
WHERE cycles.cid = cycpoints.cid;
```

Figure 32: Query Defining the CYCPOINTS_CYCLES View

Figure 33: Entity Relationship Diagram of the CYCPOINTS_CYCLES View
3.9 The DSAMPLES View

```
SELECT dartings.dartid
, dartings.sname
, dartings.date
, members.grp
, blood_unspecs.num AS bloodunspec
, blood_paxgenes.num AS bloodpaxgene
, blood_purpletops.num AS bloodpurpletops
, blood_separators.num AS bloodseptube
, blood_cpts.num AS bloodcpt
, blood_trucultures.num AS bloodtruculture
, blood_smears.num AS bloodsmear
, tc_bloods.num AS tcblood
, hair_unspecs.num AS hairunspec
, hair_lengths.num AS hairlength
, hair_cu_zns.num AS haircu_zn
, teeth_3mouths.num AS mouthphotos3
, teeth_lmandmolds.num AS lmandmold
, teeth_lmaxmolds.num AS lmaxillamold
, teeth_lmol1mol2s.num AS lm1m2siliconemold
, skin_punchs.num AS skinpunch
, tc_skins.num AS tcskin
, vag_swabs.num AS vaginalswab
, cerv_swabs.num AS cervicalswab
, fecal_formalin.num AS fecal_formalin
, vaginal_ph.num AS vaginal_ph
, palm_swab.num AS palm_swab
, tongue_swab.num AS tongue_swab
, tooth_plaque_swab.num AS tooth_plaque_swab
, vagswab_microbiome.num AS vagswab_microbiome
, glans_penis_swab.num AS glans_penis_swab
, fecal_microbiome.num AS fecal_microbiome
, nostrils_swab.num AS nostrils_swab
, skin_behind_ear_swab.num AS skin_behind_ear_swab
, skin_inside_elbow_swab.num AS skin_inside_elbow_swab
FROM dartings
JOIN members
    ON dartings.sname = members.sname
    AND dartings.date = members.date
LEFT JOIN dart_samples blood_unspecs
    ON dartings.dartid = blood_unspecs.dartid
    AND blood_unspecs.ds_type = 1
LEFT JOIN dart_samples blood_paxgenes
    ON dartings.dartid = blood_paxgenes.dartid
    AND blood_paxgenes.ds_type = 2
LEFT JOIN dart_samples blood_purpletops
    ON dartings.dartid = blood_purpletops.dartid
    AND blood_purpletops.ds_type = 3
LEFT JOIN dart_samples blood_separators
    ON dartings.dartid = blood_separators.dartid
    AND blood_separators.ds_type = 4
LEFT JOIN dart_samples blood_cpts
    ON dartings.dartid = blood_cpts.dartid
    AND blood_cpts.ds_type = 5
LEFT JOIN dart_samples blood_trucultures
    ON dartings.dartid = blood_trucultures.dartid
    AND blood_trucultures.ds_type = 6
LEFT JOIN dart_samples blood_smears
    ON dartings.dartid = blood_smears.dartid
    AND blood_smears.ds_type = 7
LEFT JOIN dart_samples hair_unspecs
    ON dartings.dartid = hair_unspecs.dartid
```
3.10 The DEMOG_CENSUS and DEMOG_CENSUS_SORTED Views

```sql
SELECT census.cenid AS cenid,
       census.sname AS sname,
       census.date AS date,
       census.grp AS grp,
       census.status AS status,
       census.cen AS cen,
       demog.reference AS reference,
       demog.comment AS comment
FROM census, demog
WHERE census.cenid = demog.cenid;
```

Figure 35: Query Defining the DEMOG_CENSUS View

Figure 36: Entity Relationship Diagram of the DEMOG_CENSUS View
3.11 The DENT_CODES View

```
SELECT teeth.dartid AS dartid,
       rum3.rum3tstate AS rum3tstate,
       rum3.rum3tcondition AS rum3tcondition,
       rum2.rum2tstate AS rum2tstate,
       rum2.rum2tcondition AS rum2tcondition,
       rum1.rum1tstate AS rum1tstate,
       rum1.rum1tcondition AS rum1tcondition,
       rup2.rup2tstate AS rup2tstate,
       rup2.rup2tcondition AS rup2tcondition,
       rup1.rup1tstate AS rup1tstate,
       rup1.rup1tcondition AS rup1tcondition,
       rup1.lup1tstate AS rup1tstate,
       rup1.lup1tcondition AS rup1tcondition,
       rup1.lup1tstate AS rup1tstate,
       rup1.lup1tcondition AS rup1tcondition,
       ruc.ructstate AS ructstate,
       ruc.ructcondition AS ructcondition,
       rui2.rui2tstate AS rui2tstate,
       rui2.rui2tcondition AS rui2tcondition,
       rui1.rui1tstate AS rui1tstate,
       rui1.rui1tcondition AS rui1tcondition,
       lli1.lli1tstate AS lli1tstate,
       lli1.lli1tcondition AS lli1tcondition,
       lli2.lli2tstate AS lli2tstate,
       lli2.lli2tcondition AS lli2tcondition,
       llm1.llm1tstate AS llm1tstate,
       llm1.llm1tcondition AS llm1tcondition,
       llm2.llm2tstate AS llm2tstate,
       llm2.llm2tcondition AS llm2tcondition,
       lum3.lum3tstate AS lum3tstate,
       lum3.lum3tcondition AS lum3tcondition,
       , llm3.llm3tstate AS llm3tstate
```

Figure 37: Query Defining the DENT_CODES View
Figure 38: Entity Relationship Diagram of the DENT_CODES View

- These columns repeat; there is a set of these columns for every TOOTHCODES row. The "TC" shown here in each column name is replaced in the actual column name with a TOOTHCODE.Tooth value.
3.12 The DENT_SITES View

```sql
SELECT teethdartids.dartid AS dartid,
    s1.sl1tstate AS sl1tstate,
    s1.sl1tcondition AS sl1tcondition,
    s1.sl1deciduous AS sl1deciduous,
    s2.sl2tstate AS sl2tstate,
    s2.sl2tcondition AS sl2tcondition,
    s2.sl2deciduous AS sl2deciduous,
    s3.sl3tstate AS sl3tstate,
    s3.sl3tcondition AS sl3tcondition,
    s3.sl3deciduous AS sl3deciduous,
    s4.sl4tstate AS sl4tstate,
    s4.sl4tcondition AS sl4tcondition,
    s4.sl4deciduous AS sl4deciduous,
    s5.sl5tstate AS sl5tstate,
    s5.sl5tcondition AS sl5tcondition,
    s5.sl5deciduous AS sl5deciduous,
    s6.sl6tstate AS sl6tstate,
    s6.sl6tcondition AS sl6tcondition,
    s6.sl6deciduous AS sl6deciduous,
    s7.sl7tstate AS sl7tstate,
    s7.sl7tcondition AS sl7tcondition,
    s7.sl7deciduous AS sl7deciduous,
    s8.sl8tstate AS sl8tstate,
    s8.sl8tcondition AS sl8tcondition,
    s8.sl8deciduous AS sl8deciduous,
    s9.sl9tstate AS sl9tstate,
    s9.sl9tcondition AS sl9tcondition,
    s9.sl9deciduous AS sl9deciduous,
    s10.sl10tstate AS sl10tstate,
    s10.sl10tcondition AS sl10tcondition,
    s10.sl10deciduous AS sl10deciduous,
    s11.sl11tstate AS sl11tstate,
    s11.sl11tcondition AS sl11tcondition,
    s11.sl11deciduous AS sl11deciduous,
    s12.sl12tstate AS sl12tstate,
    s12.sl12tcondition AS sl12tcondition,
    s12.sl12deciduous AS sl12deciduous,
    s13.sl13tstate AS sl13tstate,
    s13.sl13tcondition AS sl13tcondition,
    s13.sl13deciduous AS sl13deciduous,
    s14.sl14tstate AS sl14tstate,
    s14.sl14tcondition AS sl14tcondition,
    s14.sl14deciduous AS sl14deciduous,
    s15.sl15tstate AS sl15tstate,
    s15.sl15tcondition AS sl15tcondition,
    s15.sl15deciduous AS sl15deciduous,
    s16.sl16tstate AS sl16tstate,
    s16.sl16tcondition AS sl16tcondition,
    s16.sl16deciduous AS sl16deciduous,
    s17.sl17tstate AS sl17tstate,
    s17.sl17tcondition AS sl17tcondition,
    s17.sl17deciduous AS sl17deciduous,
    s18.sl18tstate AS sl18tstate,
    s18.sl18tcondition AS sl18tcondition,
    s18.sl18deciduous AS sl18deciduous,
    s19.sl19tstate AS sl19tstate,
    s19.sl19tcondition AS sl19tcondition,
    s19.sl19deciduous AS sl19deciduous,
    s20.sl20tstate AS sl20tstate,
    s20.sl20tcondition AS sl20tcondition,
    s20.sl20deciduous AS sl20deciduous,
    s21.sl21tstate AS sl21tstate,
    s21.sl21tcondition AS sl21tcondition,
Figure 40: Entity Relationship Diagram of the DENT_SITES View

- The Tstate value of the TEETH row having the correct Darlid and a related Toothsite value corresponding with the Toothsite code appearing in the column name, or NULL if no such row exists.
- The Tcondition value of the TEETH row having the correct Darlid and a related Toothsite value corresponding with the Toothsite code appearing in the column name, or NULL if no such row exists.
- The Deciduous value of the TOOTHCODES row related to the TEETH row having the correct Darlid and a Toothsite value corresponding with the Toothsite code appearing in the column name, or NULL if no such row exists.

+ These columns repeat; there is a set of these columns for every distinct TOOTHCODES Toothsite value. The "TS" shown here in each column name is replaced in the actual column name with the letter "s" followed by a TOOTHCODE Toothsite value.
### 3.13 The INTERACT and INTERACT_SORTED Views

```
SELECT iid AS iid,
      interact_data.sid AS sid,
      interact_data.act AS act,
      acts.class AS class,
      interact_data.date AS date,
      julian(interact_data.date) AS jdate,
      interact_data.start AS start,
      spm(interact_data.start) AS startspm,
      stop AS stop,
      spm(interact_data.stop) AS stopspm,
      interact_data.observer AS observer,
      interact_data.handwritten AS handwritten
FROM interact_data
JOIN acts
  ON (acts.act = interact_data.act);
```

Figure 41: Query Defining the INTERACT View

<table>
<thead>
<tr>
<th>INTERACT_DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>iid (id)</td>
</tr>
<tr>
<td>Sid (Sid)</td>
</tr>
<tr>
<td>Act (Act)</td>
</tr>
<tr>
<td>Date (Date)</td>
</tr>
<tr>
<td>(Jdate)</td>
</tr>
<tr>
<td>Start (Start)</td>
</tr>
<tr>
<td>(Startspm)</td>
</tr>
<tr>
<td>Stop (Stop)</td>
</tr>
<tr>
<td>(Stopspm)</td>
</tr>
<tr>
<td>Observer *</td>
</tr>
<tr>
<td>Handwritten</td>
</tr>
</tbody>
</table>

Figure 42: Entity Relationship Diagram of the INTERACT View
3.14 The MATERNITIES View

SELECT cycles.sname AS mom
    , cycles.cid AS cid
    , cycles.seq AS seq
    , cycles.series AS series
    , cycpoints.cpid AS conceive
    , cycpoints.date AS zdate
    , members.grp AS zdate_grp
    , cycpoints.edate AS edate
    , cycpoints.ldate AS ldate
    , cycpoints.source AS source
    , pregs.pid AS pid
    , pregs.parity AS parity
    , biograph.bioid AS child_bioid
    , biograph.sname AS child
    , biograph.birth AS birth
FROM cycles
JOIN cycpoints ON (cycpoints.cid = cycles.cid)
JOIN members ON (members.date = cycpoints.date
    AND members.sname = cycles.sname)
JOIN pregs ON (pregs.conceive = cycpoints.cpid)
JOIN biograph ON (pregs.pid = biograph.pid);

Figure 43: Query Defining the MATERNITIES View
Figure 44: Entity Relationship Diagram of the MATERNITIES View

+ Although a join on this column alone returns multiple rows, because there is another join on a different column only 1 row matches all the criteria. (The combination of Sname and Date is unique.)
3.15 The MIN_MAXS View

SELECT wreadings.wrid AS wrid
, wreadings.wstation AS wstation
, wreadings.wrdaytime AS wrdaytime
, wreadings.estdaytime AS estdaytime
, wreadings.wrperson AS wrperson
, wreadings.wrnotes AS wrnotes
, tempmins.tempmin AS tempmin
, tempmaxs.tempmax AS tempmax
, raingauges.rgspan AS rgspan
, raingauges.estrgspan AS estrgspan
, raingauges.rain AS rain
FROM wreadings
  LEFT OUTER JOIN tempmins
    ON wreadings.wrid = tempmins.wrid
  LEFT OUTER JOIN tempmaxs
    ON wreadings.wrid = tempmaxs.wrid
  LEFT OUTER JOIN raingauges
    ON wreadings.wrid = raingauges.wrid;

Figure 45: Query Defining the MIN_MAXS View
Figure 46: Entity Relationship Diagram of the MIN_MAXS View
3.16 The MIN_MAXS_SORTED View

SELECT wreadings.wrid AS wrid
  , wreadings.wstation AS wstation
  , wreadings.wrdaytime AS wrdaytime
  , wreadings.estdaytime AS estdaytime
  , wreadings.wrperson AS wrperson
  , wreadings.wrnotes AS wrnotes
  , tempmins.tempmin AS tempmin
  , tempmaxs.tempmax AS tempmax
  , raingauges.rgspan AS rgspan
  , raingauges.estrgspan AS estrgspan
  , raingauges.rain AS rain
FROM wreadings
  LEFT OUTER JOIN tempmins
    ON wreadings.wrid = tempmins.wrid
  LEFT OUTER JOIN tempmaxs
    ON wreadings.wrid = tempmaxs.wrid
  LEFT OUTER JOIN raingauges
    ON wreadings.wrid = raingauges.wrid
ORDER BY wreadings.wrdaytime, wreadings.wstation;;

Figure 47: Query Defining the MIN_MAXS_SORTED View
Figure 48: Entity Relationship Diagram of the MIN_MAXS_SORTED View
### 3.17 The MPI_EVENTS View

```sql
SELECT mpis.mpiid AS mpiid,
    , mpis.date AS date
    , mpis.context_type AS context_type
    , mpis.context AS context
    , mpi_data.mpidid AS mpidid
    , mpi_data.seq AS seq
    , mpi_data.mpiact AS mpiact
    , actor.mpipid AS actorid
    , actor.sname AS actor
    , actor.unksname AS unkactor
    , actee.mpipid AS acteeid
    , actee.sname AS actee
    , actee.unksname AS unkactee
    , CASE WHEN EXISTS(SELECT 1
                FROM mpiacts
                WHERE mpiacts.mpiact = mpi_data.mpiact
                        AND mpiacts.kind = 'H')
            THEN
                EXISTS(SELECT 1
                        FROM mpi_data AS request,
                        mpiacts,
                        mpi_parts AS requestor,
                        mpi_parts AS requestee
                        WHERE request.mpiid = mpi_data.mpiid
                                AND request.seq < mpi_data.seq
                                AND mpiacts.mpiact = request.mpiact
                                AND mpiacts.kind = 'R'
                                AND requestor.mpidid = request.mpidid
                                AND requestor.role = 'R'
                                AND requestor.sname = actee.sname
                                AND requestee.mpidid = request.mpidid
                                AND requestee.role = 'E'
                                AND requestee.sname = actor.sname)
            ELSE
                NULL
            END AS solicited
    
    , EXISTS(SELECT 1
                FROM mpi_data AS initial,
                mpiacts
                WHERE initial.mpiid = mpi_data.mpiid
                        AND initial.seq = 1
                        AND mpiacts.mpiact = initial.mpiact
                        AND mpiacts.decided)
    AS decided
    
    , mpi_data.helped AS helped
    , mpi_data.active AS active
FROM mpis
LEFT OUTER JOIN mpi_data ON (mpis.mpiid = mpi_data.mpiid)
LEFT OUTER JOIN mpi_parts AS actor
    ON (actor.mpidid = mpi_data.mpidid AND actor.role = 'R')
LEFT OUTER JOIN mpi_parts AS actee
    ON (actee.mpidid = mpi_data.mpidid AND actee.role = 'E');
```

Figure 49: Query Defining the MPI_EVENTS View
Figure 50: Entity Relationship Diagram of the MPI_EVENTS View
3.18 The MTD_CYCLES View

SELECT cycles.cid AS cid,
       cycles.sname AS sname,
       cycles.seq AS seq,
       cycles.series AS series,
       mcp.cpid AS mcpid,
       mcp.date AS mdate,
       mcp.edate AS emdate,
       mcp.ldate AS lmdate,
       mcp.source AS msource,
       tcp.cpid AS tcpid,
       tcp.date AS tdate,
       tcp.edate AS etdate,
       tcp.ldate AS ltdate,
       tcp.source AS tsource,
       dcp.cpid AS dcpid,
       dcp.date AS ddate,
       dcp.edate AS eddate,
       dcp.ldate AS lddate,
       dcp.source AS dsourse
FROM cycles
LEFT OUTER JOIN cycpoints AS mcp ON (mcp.cid = cycles.cid AND mcp.code = 'M')
LEFT OUTER JOIN cycpoints AS tcp ON (tcp.cid = cycles.cid AND tcp.code = 'T')
LEFT OUTER JOIN cycpoints AS dcp ON (dcp.cid = cycles.cid AND dcp.code = 'D')
ORDER BY cycles.sname, cycles.seq;

Figure 51: Query Defining the MTD_CYCLES View
Figure 52: Entity Relationship Diagram of the MTD_CYCLES View
3.19 The PARENTS View

SELECT biograph.sname AS kid,
  maternities.mom AS mom,
  maternities.zdate AS zdate,
  maternities.zdate_grp AS momgrp,
  members.grp AS dadgrp
FROM biograph
  LEFT OUTER JOIN maternities
    ON (maternities.child = biograph.sname)
  LEFT OUTER JOIN dad_data
    ON (dad_data.kid = biograph.sname)
  LEFT OUTER JOIN members
    ON (members.sname = dad_data.dad_consensus
        AND members.date = maternities.zdate)
WHERE maternities.mom IS NOT NULL
  OR dad_data.dad_consensus IS NOT NULL;

Figure 53: Query Defining the PARENTS View
### 3.20 The PCSKINS_SORTED View

```
SELECT pcskins.pcsid AS pcsid
    , pcskins.sname AS sname
    , pcskins.date AS date
    , pcskins.color AS color
FROM pcskins
ORDER BY sname, date;
```

Figure 55: Query Defining the PCSKINS_SORTED View
3.21 The PCV_STATS View

SELECT pcvs.dartid AS dartid
    , count(*) AS pcvsamps
    , avg(pcvs.pcv) AS pcv_mean
    , stddev(pcvs.pcv) AS pcv_stddev
FROM pcvs
GROUP BY pcvs.dartid;

Figure 56: Entity Relationship Diagram of the PCSKINS_SORTED View

Figure 57: Query Defining the PCV_STATS View

Figure 58: Entity Relationship Diagram of the PCV_STATS View
3.22 The POINTS and POINTS_SORTED Views

```sql
SELECT pntid AS pntid,
       sid AS sid,
       activity AS activity,
       posture AS posture,
       foodcode AS foodcode,
       ptime AS ptime,
       spm(ptime) AS ptimespm
FROM point_data;
```

Figure 59: Query Defining the POINTS View

<table>
<thead>
<tr>
<th>POINT_DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pntid (Pntid)</td>
</tr>
<tr>
<td>Sid (Sid)</td>
</tr>
<tr>
<td>Activity * (Activity)</td>
</tr>
<tr>
<td>Posture * (Posture)</td>
</tr>
<tr>
<td>Foodcode * (Foodcode)</td>
</tr>
<tr>
<td>Ptime (Ptime)</td>
</tr>
</tbody>
</table>

Figure 60: Entity Relationship Diagram of the POINTS View
3.23 The POTENTIAL_DADS View

```sql
SELECT maternities.child_bioid AS bioid,
      maternities.child AS kid,
      maternities.mom AS mom,
      maternities.zdate AS zdate,
      maternities.zdate_grp AS grp,
      pdads.sname AS pdad,
      CASE
        WHEN rankdates.ranked <= maternities.zdate
          THEN 'A'
        WHEN maturedates.matured <= maternities.zdate
          THEN 'S'
        ELSE 'O'
      END AS status,
      maternities.zdate - pdads.birth AS pdad_age_days,
      trunc((maternities.zdate - pdads.birth) / 365.25, 1) AS pdad_age_years,
      (SELECT count(*)
      FROM members AS dadmembers
      JOIN members AS mommembers
      ON (mommembers.date = dadmembers.date
          AND supergroup(mommembers.grp, mommembers.date) = supergroup(dadmembers.grp, dadmembers.date))
      WHERE dadmembers.sname = pdads.sname
      AND dadmembers.date < maternities.zdate
      AND dadmembers.date >= maternities.zdate - 5
      AND mommembers.sname = maternities.mom
      AND mommembers.date < maternities.zdate
      AND mommembers.date >= maternities.zdate - 5)
      AS estrous_presence,
      (SELECT count(*)
      FROM actor_actees
      WHERE actor_actees.date < maternities.zdate
      AND actor_actees.date >= maternities.zdate - 5
      AND (actor_actees.act = 'M'
           OR actor_actees.act = 'E')
      AND actor_actees.actor = pdads.sname
      AND actor_actees.actee = maternities.mom)
      AS estrous_me,
      (SELECT count(*)
      FROM actor_actees
      WHERE actor_actees.date < maternities.zdate
      AND actor_actees.date >= maternities.zdate - 5
      AND actor_actees.act = 'C'
      AND actor_actees.actor = pdads.sname
      AND actor_actees.actee = maternities.mom)
      AS estrous_c
FROM maternities
JOIN biograph AS pdads
ON (pdads.sname IN (SELECT dadmembers.sname
                       FROM members AS dadmembers
                       JOIN members AS mommembers
                       ON (mommembers.date = dadmembers.date
                           AND supergroup(mommembers.grp, mommembers.date) = supergroup(dadmembers.grp, dadmembers.date))
                       WHERE dadmembers.sname = pdads.sname
                       AND dadmembers.date < maternities.zdate
                       AND dadmembers.date >= maternities.zdate - 5
                       AND mommembers.sname = maternities.mom
                       AND mommembers.date < maternities.zdate
                       AND mommembers.date >= maternities.zdate - 5))
LEFT OUTER JOIN rankdates
ON (rankdates.sname = pdads.sname)
LEFT OUTER JOIN maturedates
ON (maturedates.sname = pdads.sname)
WHERE pdads.sex = 'M'
-- Speed things up by eliminating potential dads
-- who could not possibly interpolate into the mom's group
-- during the fertile period.
AND pdads.statdate >= maternities.zdate - 5 - 14
-- Potential dad must be at least 2192 days old
-- (approximately 6 years) on the zdate.
AND maternities.zdate - pdads.birth >= 2192;
```

Figure 61: Query Defining the POTENTIAL_DADS View
Figure 62: Entity Relationship Diagram of the foundation of the POTENTIAL_DADS View

* PDADS is an alias for BIOGRAPH, representing those BIOGRAPH rows that satisfy the conditions required to be considered a potential dad of a given kid. It does not appear anywhere as an independent entity. Additional conditions, as shown on other diagrams, must also be true for a BIOGRAPH row to be a PDADS row.
Figure 63: Entity Relationship Diagram of that portion of the POTENTIAL_DADS View which places the mother and potential father in the same group during the fertile period.
Figure 64: Entity Relationship Diagram of that portion of the POTENTIAL_DADS View having easily computed columns

* PDADS is an alias for BIOGRAPH, representing those BIOGRAPH rows that satisfy the conditions required to be considered a potential dad of a given kid. It does not appear anywhere as an independent entity. Additional conditions, as shown on other diagrams, must also be true for a BIOGRAPH row to be a PDADS row.
3.24 The QUADS View

SELECT quad_data.quad AS quad,
       ST_X(quad_data.xyloc) AS x,
       ST_Y(quad_data.xyloc) AS y,
       quad_data.aerial AS aerial
FROM quad_data;

Figure 66: Query Defining the QUADS View
3.25 The SEXSKINS_CYCLES and SEXSKINS_CYCLES_SORTED Views

SELECT cycles.cid AS cid,
     cycles.sname AS sname,
     cycles.seq AS seq,
     cycles.series AS series,
     sexskins.sxid AS sxid,
     sexskins.date AS date,
     sexskins.size AS size
FROM sexskins, cycles
WHERE cycles.cid = sexskins.cid
ORDER BY cycles.sname, sexskins.date;

Figure 67: Entity Relationship Diagram of the QUADS View

Figure 68: Query Defining the SEXSKINS_CYCLES View

Figure 69: Entity Relationship Diagram of the SEXSKINS_CYCLES View
3.26 The SWERB view

```sql
SELECT swerb_data.swid AS swid,
       swerb_departs_data.did AS did,
       swerb_departs_data.date AS date,
       swerb_data.time AS time,
       swerb_bes.beid AS beid,
       swerb_bes.focal_grp AS focal_grp,
       swerb_bes.seq AS seq,
       swerb_data.event AS event,
       swerb_data.seen_grp AS seen_grp,
       swerb_data.lone_animal AS lone_animal,
       swerb_data.quad AS quad,
       CASE
         WHEN swerb_data.xyloc IS NULL
           THEN 'quad'
         ELSE 'gps'
       END AS merged_is,
       COALESCE(ST_X(swerb_data.xyloc), ST_X(quad_data.xyloc)) AS x,
       COALESCE(ST_Y(swerb_data.xyloc), ST_Y(quad_data.xyloc)) AS y,
       swerb_data.altitude AS altitude,
       swerb_data.pdop AS pdop,
       swerb_data.accuracy AS accuracy,
       swerb_data.subgroup AS subgroup,
       swerb_data.ogdistance AS ogdistance,
       swerb_data.garmincode AS garmincode,
       swerb_loc_data.loc AS loc,
       swerb_loc_data.adcode AS adcode,
       adcodes.adn AS adn,
       swerb_loc_data.loc_status AS loc_status,
       swerb_loc_data.adtime AS adtime,
       ST_X(swerb_loc_gps.xyloc) AS second_x,
       ST_Y(swerb_loc_gps.xyloc) AS second_y,
       swerb_loc_gps.altitude AS second_altitude,
       swerb Loc_gps.pdop AS second_pdop,
       swerb_loc_gps.accuracy AS second_accuracy,
       swerb_loc_gps.gps_datetime AS second_gps_datetime,
       swerb_loc_gps.garmincode AS second_garmincode,
       swerb_bes.start AS start,
       swerb_bes.btimeest AS btimeest,
       swerb_bes.bsource AS bsource,
       swerb_bes.stop AS stop,
       swerb_bes.etimeest AS etimeest,
       swerb_bes.esource AS esource,
       swerb_bes.is_effort AS is_effort,
       swerb_departs_gps.gps AS gps,
       swerb_bes.notes AS notes
FROM swerb_data
  LEFT OUTER JOIN quad_data ON (quad_data.quad = swerb_data.quad)
  JOIN swerb_bes ON (swerb_bes.beid = swerb_data.beid)
  JOIN swerb_departs_data ON (swerb_departs_data.did = swerb_bes.did)
  LEFT OUTER JOIN swerb_departs_gps ON (swerb_departs_gps.did = swerb_bes.did)
  LEFT OUTER JOIN swerb_loc_data ON (swerb_loc_data.swid = swerb_data.swid)
  LEFT OUTER JOIN adcodes ON (adcodes.adcode = swerb_loc_data.adcode)
  LEFT OUTER JOIN swerb_loc_gps
```

Figure 70: Query Defining the SWERB View
Figure 71: Entity Relationship Diagram of the SWERB View
3.27 The SWERB_DEPARTS view

```sql
SELECT swerb_departs_data.did AS did ,
       swerb_departs_data.date AS date ,
       swerb_departs_data.time AS time ,
       ST_X(swerb_departs_gps.xyloc) AS x ,
       ST_Y(swerb_departs_gps.xyloc) AS y ,
       swerb_departs_gps.altitude AS altitude ,
       swerb_departs_gps.pdop AS pdop ,
       swerb_departs_gps.accuracy AS accuracy ,
       swerb_departs_gps.gps AS gps ,
       swerb_departs_gps.garmincode AS garmincode
FROM swerb_departs_data
LEFT OUTER JOIN swerb_departs_gps
ON (swerb_departs_gps.did = swerb_departs_data.did);
```

Figure 72: Query Defining the SWERB_DEPARTS View

![Entity Relationship Diagram of the SWERB_DEPARTS View](image)

3.28 The SWERB_LOC_GPS_XY view

```sql
SELECT swerb_loc_gps.swid AS swid ,
       ST_X(swerb_loc_gps.xyloc) AS x ,
       ST_Y(swerb_loc_gps.xyloc) AS y ,
       swerb_loc_gps.altitude AS altitude ,
       swerb_loc_gps.pdop AS pdop ,
       swerb_loc_gps.accuracy AS accuracy ,
       swerb_loc_gps.gps AS gps ,
       swerb_loc_gps.garmincode AS garmincode
FROM swerb_loc_gps;
```

Figure 74: Query Defining the SWERB_LOC_GPS_XY View
3.29 The SWERB_LOCS view

```
SELECT swerb_loc_data.swid AS swid, 
     swerb_loc_data.loc AS loc, 
     swerb_loc_data.adcode AS adcode, 
     adcodes.adn AS adn, 
     swerb_loc_data.loc_status AS loc_status, 
     swerb_loc_data.adtime AS time 
FROM swerb_loc_data 
JOIN adcodes ON (adcodes.adcode = swerb_loc_data.adcode);
```

Figure 75: Entity Relationship Diagram of the SWERB_LOC_GPS_XY View

Figure 76: Query Defining the SWERB_LOCS View

Figure 77: Entity Relationship Diagram of the SWERB_LOCS View
3.30 The SWERB_UPLOAD view

```sql
SELECT NULL::TEXT AS header,
       NULL::TEXT AS name,
       NULL::TEXT AS description,
       NULL::TEXT AS type,
       NULL::TEXT AS position,
       NULL::TEXT AS altitude,
       NULL::TEXT AS depth,
       NULL::TEXT AS proximity,
       NULL::TEXT AS display_mode,
       NULL::TEXT AS color,
       NULL::TEXT AS symbol,
       NULL::TEXT AS facility,
       NULL::TEXT AS city,
       NULL::TEXT AS state,
       NULL::TEXT AS country,
       NULL::TEXT AS pdop,
       NULL::TEXT AS accuracy,
       NULL::TEXT AS quad,
       NULL::TEXT AS date,
       NULL::TEXT AS timeest,
       NULL::TEXT AS source,
       NULL::TEXT AS lone_animal,
       NULL::BOOLEAN AS is_effort,
       NULL::TEXT AS secondary_ad,
       NULL::TEXT AS notes
WHERE _raise_babase_exception(
    'Cannot select SWERB_UPLOAD'
    || ': The only use of the SWERB_UPLOAD view is to insert'
    || ' new data into the SWERB portion of babase');
```

Figure 78: Query Defining the SWERB_UPLOAD View

The SWERB_UPLOAD view is used only to insert data into the SWERB portion of Babase. Since it cannot be queried and the semantics of the uploaded file varies by line it has no ER diagram.

Figure 79: Entity Relationship Diagram of the SWERB_UPLOAD View

3.31 The ULNA_STATS View

```sql
SELECT ulnas.dartid AS dartid,
       count(*) AS ulsamps,
       avg(ulnas.ullength) AS ullength_mean,
       stddev(ulnas.ullength) AS ullength_stddev,
       avg(ulnas.ulunadjusted) AS ulunadjusted_mean,
       stddev(ulnas.ulunadjusted) AS ulunadjusted_stddev
FROM ulnas
GROUP BY ulnas.dartid;
```

Figure 80: Query Defining the ULNA_STATS View
Figure 81: Entity Relationship Diagram of the ULNA_STATS View
3.32 The TESTES_ARC_STATS View

SELECT testesdartids.dartid AS dartid
  , testeslength.testllengthsamps AS testllengthsamps
  , testeslength.testllength_mean AS testllength_mean
  , testeslength.testllength_stddev AS testllength_stddev
  , testeslwidth.testlwidthsamps AS testlwidthsamps
  , testeslwidth.testlwidth_mean AS testlwidth_mean
  , testeslwidth.testlwidth_stddev AS testlwidth_stddev
  , testesrlength.testrlengthsamps AS testrlengthsamps
  , testesrlength.testrlength_mean AS testrlength_mean
  , testesrlength.testrlength_stddev AS testrlength_stddev
  , testesrwidth.testrwidthsamps AS testrwidthsamps
  , testesrwidth.testrwidth_mean AS testrwidth_mean
  , testesrwidth.testrwidth_stddev AS testrwidth_stddev
FROM (SELECT testes_arc.dartid
  FROM testes_arc
  GROUP BY testes_arc.dartid)
AS testesdartids
LEFT OUTER JOIN
  (SELECT testes_arc.dartid AS llengthdartid
  , count(*) AS testllengthsamps
  , avg(testes_arc.testlength) AS testllength_mean
  , stddev(testes_arc.testlength) AS testllength_stddev
  FROM testes_arc
  WHERE testes_arc.testside = 'L'
    AND testes_arc.testlength IS NOT NULL
  GROUP BY testes_arc.dartid)
AS testesllength
ON testesllength.llengthdartid = testesdartids.dartid
LEFT OUTER JOIN
  (SELECT testes_arc.dartid AS lwidthdartid
  , count(*) AS testlwidthsamps
  , avg(testes_arc.testwidth) AS testlwidth_mean
  , stddev(testes_arc.testwidth) AS testlwidth_stddev
  FROM testes_arc
  WHERE testes_arc.testside = 'L'
    AND testes_arc.testwidth IS NOT NULL
  GROUP BY testes_arc.dartid)
AS testeslwidth
ON testeslwidth.lwidthdartid = testesdartids.dartid
LEFT OUTER JOIN
  (SELECT testes_arc.dartid AS rlengthdartid
  , count(*) AS testrlengthsamps
  , avg(testes_arc.testlength) AS testrlength_mean
  , stddev(testes_arc.testlength) AS testrlength_stddev
  FROM testes_arc
  WHERE testes_arc.testside = 'R'
    AND testes_arc.testlength IS NOT NULL
  GROUP BY testes_arc.dartid)
AS testesrlength
ON testesrlength.rlengthdartid = testesdartids.dartid
LEFT OUTER JOIN
  (SELECT testes_arc.dartid AS rwidthdartid
  , count(*) AS testrwidthsamps
  , avg(testes_arc.testwidth) AS testrwidth_mean
  , stddev(testes_arc.testwidth) AS testrwidth_stddev
  FROM testes_arc
  WHERE testes_arc.testside = 'R'
    AND testes_arc.testwidth IS NOT NULL
  GROUP BY testes_arc.dartid)
AS testesrwidth
ON testesrwidth.rwidthdartid = testesdartids.dartid;
Figure 83: Entity Relationship Diagram of the TESTES_ARC_STATS View
3.33 The TESTES_DIAM_STATS View

```sql
SELECT testesdartids.dartid AS dartid
, testeslwidth.testlwidthsamps AS testlwidthsamps
, testeslwidth.testlwidth_mean AS testlwidth_mean
, testeslwidth.testlwidth_stddev AS testlwidth_stddev
, testesrlength.testrlengthsamps AS testrlengthsamps
, testesrlength.testrlength_mean AS testrlength_mean
, testesrlength.testrlength_stddev AS testrlength_stddev
, testesrwidth.testrwidthsamps AS testrwidthsamps
, testesrwidth.testrwidth_mean AS testrwidth_mean
, testesrwidth.testrwidth_stddev AS testrwidth_stddev
FROM (SELECT testes_diam.dartid
    FROM testes_diam
    GROUP BY testes_diam.dartid)
AS testesdartids
LEFT OUTER JOIN (SELECT testes_diam.dartid AS llengthdartid
    , count(*) AS testllengthsamps
    , avg(testes_diam.testlength) AS testllength_mean
    , stddev(testes_diam.testlength) AS testllength_stddev
    FROM testes_diam
    WHERE testes_diam.testside = 'L'
    AND testes_diam.testlength IS NOT NULL
    GROUP BY testes_diam.dartid)
AS testesllength
ON testesllength.llengthdartid = testesdartids.dartid
LEFT OUTER JOIN (SELECT testes_diam.dartid AS lwidthdartid
    , count(*) AS testlwidthsamps
    , avg(testes_diam.testwidth) AS testlwidth_mean
    , stddev(testes_diam.testwidth) AS testlwidth_stddev
    FROM testes_diam
    WHERE testes_diam.testside = 'L'
    AND testes_diam.testwidth IS NOT NULL
    GROUP BY testes_diam.dartid)
AS testeslwidth
ON testeslwidth.lwidthdartid = testesdartids.dartid
LEFT OUTER JOIN (SELECT testes_diam.dartid AS rlengthdartid
    , count(*) AS testrlengthsamps
    , avg(testes_diam.testlength) AS testrlength_mean
    , stddev(testes_diam.testlength) AS testrlength_stddev
    FROM testes_diam
    WHERE testes_diam.testside = 'R'
    AND testes_diam.testlength IS NOT NULL
    GROUP BY testes_diam.dartid)
AS testesrlength
ON testesrlength.rlengthdartid = testesdartids.dartid
LEFT OUTER JOIN (SELECT testes_diam.dartid AS rwidthdartid
    , count(*) AS testrwidthsamps
    , avg(testes_diam.testwidth) AS testrwidth_mean
    , stddev(testes_diam.testwidth) AS testrwidth_stddev
    FROM testes_diam
    WHERE testes_diam.testside = 'R'
    AND testes_diam.testwidth IS NOT NULL
    GROUP BY testes_diam.dartid)
AS testesrwidth
ON testesrwidth.rwidthdartid = testesdartids.dartid;
```

Figure 84: Query Defining the TESTES_DIAM_STATS View
In addition to the above views, there are a number of views which produce the group of a referenced individual as of a pertinent date. These views are all named after the table from which they are derived, with the addition of the suffixed \_GRP. They are nearly identical to the table from which they derive, differing only by the addition of a column named Grp.

The only operation allowed on these views is SELECT. INSERT, UPDATE, and DELETE are not allowed.
4.1 The BIRTH_GRP View

SELECT biograph.*, members.grp AS grp
FROM members, biograph
WHERE members.sname = biograph.sname
  AND members.date = CAST(biograph.birth AS DATE);

Figure 86: Query Defining the BIRTH_GRP View

![Entity Relationship Diagram of the BIRTH_GRP View]

4.2 The ENTRYDATE_GRP View

SELECT biograph.*, members.grp AS grp
FROM members, biograph
WHERE members.sname = biograph.sname
  AND members.date = CAST(biograph.entrydate AS DATE);

Figure 88: Query Defining the ENTRYDATE_GRP View

![Entity Relationship Diagram of the ENTRYDATE_GRP View]
4.3 The STATDATE_GRP View

```sql
SELECT biograph.*, members.grp AS grp
FROM members, biograph
WHERE members.sname = biograph.sname
  AND members.date = CAST(biograph.statdate AS DATE);
```

Figure 90: Query Defining the STATDATE_GRP View

<table>
<thead>
<tr>
<th>BIOGRAPH</th>
<th>Individual in question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sname (Sname)</td>
<td></td>
</tr>
<tr>
<td>Statdate (Statdate)</td>
<td></td>
</tr>
<tr>
<td>Remainder of columns in BIOGRAPH...</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEMBERS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sname (Sname)</td>
<td></td>
</tr>
<tr>
<td>Date (Statdate)</td>
<td></td>
</tr>
<tr>
<td>Grp (Grp)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 91: Entity Relationship Diagram of the STATDATE_GRP View

4.4 The CONSORTDATES_GRP View

```sql
SELECT consortdates.*, members.grp AS grp
FROM members, consortdates
WHERE members.sname = consortdates.sname
  AND members.date = CAST(consortdates.consorted AS DATE);
```

Figure 92: Query Defining the CONSORTDATES_GRP View

<table>
<thead>
<tr>
<th>CONSORTDATES</th>
<th>Individual in question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sname (Sname)</td>
<td></td>
</tr>
<tr>
<td>Consorted (Consorted)</td>
<td></td>
</tr>
<tr>
<td>Remainder of columns in CONSORTDATES...</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEMBERS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sname (Sname)</td>
<td></td>
</tr>
<tr>
<td>Date (Consorted)</td>
<td></td>
</tr>
<tr>
<td>Grp (Grp)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 93: Entity Relationship Diagram of the CONSORTDATES_GRP View
4.5 The CYCGAPDAYS_GRP View

SELECT cycgapdays.*
    , members.grp AS grp
FROM members, cycgapdays
WHERE members.sname = cycgapdays.sname
    AND members.date = CAST(cycgapdays.date AS DATE);

Figure 94: Query Defining the CYCGAPDAYS_GRP View

Figure 95: Entity Relationship Diagram of the CYCGAPDAYS_GRP View

4.6 The CYCGAPS_GRP View

SELECT cycgaps.*
    , members.grp AS grp
FROM members, cycgaps
WHERE members.sname = cycgaps.sname
    AND members.date = CAST(cycgaps.date AS DATE);

Figure 96: Query Defining the CYCGAPS_GRP View

Figure 97: Entity Relationship Diagram of the CYCGAPS_GRP View
4.7 The CYCSTATS_GRP View

```sql
SELECT cycstats.*, members.grp AS grp 
FROM members, cycstats 
WHERE members.sname = cycstats.sname 
AND members.date = CAST(cycstats.date AS DATE);
```

Figure 98: Query Defining the CYCSTATS_GRP View

![Entity Relationship Diagram of the CYCSTATS_GRP View](image)

4.8 The DARTINGS_GRP View

```sql
SELECT dartings.*, members.grp AS grp 
FROM members, dartings 
WHERE members.sname = dartings.sname 
AND members.date = CAST(dartings.date AS DATE);
```

Figure 100: Query Defining the DARTINGS_GRP View

![Entity Relationship Diagram of the DARTINGS_GRP View](image)
4.9 The DISPERSEDATES_GRP View

```
SELECT dispersedates.* , members.grp AS grp
FROM members, dispersedates
WHERE members.sname = dispersedates.sname
    AND members.date = CAST(dispersedates.dispersed AS DATE);
```

Figure 102: Query Defining the DISPERSEDATES_GRP View

<table>
<thead>
<tr>
<th>DISPERSEDATES</th>
<th>MEMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sname (Sname)</td>
<td>Sname (Sname)</td>
</tr>
<tr>
<td>Dispersed (Dispersed)</td>
<td>Date (Dispersed)</td>
</tr>
<tr>
<td>Remainder of columns in DISPERSEDATES...</td>
<td>Grp (Grp)</td>
</tr>
</tbody>
</table>

Figure 103: Entity Relationship Diagram of the DISPERSEDATES_GRP View

4.10 The MATUREDATES_GRP View

```
SELECT maturedates.* , members.grp AS grp
FROM members, maturedates
WHERE members.sname = maturedates.sname
    AND members.date = CAST(maturedates.matured AS DATE);
```

Figure 104: Query Defining the MATUREDATES_GRP View

<table>
<thead>
<tr>
<th>MATUREDATES</th>
<th>MEMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sname (Sname)</td>
<td>Sname (Sname)</td>
</tr>
<tr>
<td>Matured (Matured)</td>
<td>Date (Matured)</td>
</tr>
<tr>
<td>Remainder of columns in MATUREDATES...</td>
<td>Grp (Grp)</td>
</tr>
</tbody>
</table>

Figure 105: Entity Relationship Diagram of the MATUREDATES_GRP View
4.11 The MDINTERVALS_GRP View

```
SELECT mdintervals.*
  , members.grp AS grp
FROM members, mdintervals
WHERE members.sname = mdintervals.sname
  AND members.date = CAST(mdintervals.date AS DATE);
```

Figure 106: Query Defining the MDINTERVALS_GRP View

<table>
<thead>
<tr>
<th>MDINTERVALS</th>
<th>Individual in question</th>
<th>MEMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDId (MDId)</td>
<td></td>
<td>Sname (Sname)</td>
</tr>
<tr>
<td>Sname (Sname)</td>
<td></td>
<td>Date (Date)</td>
</tr>
<tr>
<td>Date (Date)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of columns in MDINTERVALS....</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 107: Entity Relationship Diagram of the MDINTERVALS_GRP View

4.12 The MMINTERVALS_GRP View

```
SELECT mmintervals.*
  , members.grp AS grp
FROM members, mmintervals
WHERE members.sname = mmintervals.sname
  AND members.date = CAST(mmintervals.date AS DATE);
```

Figure 108: Query Defining the MMINTERVALS_GRP View

<table>
<thead>
<tr>
<th>MMINTERVALS</th>
<th>Individual in question</th>
<th>MEMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMId (MMId)</td>
<td></td>
<td>Sname (Sname)</td>
</tr>
<tr>
<td>Sname (Sname)</td>
<td></td>
<td>Date (Date)</td>
</tr>
<tr>
<td>Date (Date)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of columns in MMINTERVALS....</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 109: Entity Relationship Diagram of the MMINTERVALS_GRP View
4.13 The PCSKINS_GRP View

```
SELECT pcskins.*, 
    members.grp AS grp 
FROM members, pcskins 
WHERE members.sname = pcskins.sname 
    AND members.date = CAST(pcskins.date AS DATE);
```

Figure 110: Query Defining the PCSKINS_GRP View

![Entity Relationship Diagram of the PCSKINS_GRP View](image1)

4.14 The RANKDATES_GRP View

```
SELECT rankdates.*, 
    members.grp AS grp 
FROM members, rankdates 
WHERE members.sname = rankdates.sname 
    AND members.date = CAST(rankdates.ranked AS DATE);
```

Figure 112: Query Defining the RANKDATES_GRP View

![Entity Relationship Diagram of the RANKDATES_GRP View](image2)
### 4.15 The REPSTATS_GRP View

```sql
SELECT repstats.*, members.grp AS grp
FROM members, repstats
WHERE members.sname = repstats.sname
  AND members.date = CAST(repstats.date AS DATE);
```

Figure 114: Query Defining the REPSTATS_GRP View

<table>
<thead>
<tr>
<th>REPSTATS</th>
<th>Individual in question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rid (Rid)</td>
<td></td>
</tr>
<tr>
<td>Sname (Sname)</td>
<td></td>
</tr>
<tr>
<td>Date (Date)</td>
<td></td>
</tr>
<tr>
<td>Remainder of columns in REPSTATS...</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEMBERS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sname (Sname)</td>
<td></td>
</tr>
<tr>
<td>Date (Date)</td>
<td></td>
</tr>
<tr>
<td>Grp (Grp)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 115: Entity Relationship Diagram of the REPSTATS_GRP View