



# Harmonization of Genetic Testing for Dogs (HGTD)

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**CEO International Partnership for Dogs (IPFD)**



# Genetic Testing – why is it done?

- **Individual animal**

- Breed background/ heritage
- Diagnosis/ prognosis/ therapy

- **Breeding**

- Risk reduction

- **Breed/ population**

- Risk
- Diversity

- **Veterinarians**

- Clinical / individual
- Marketing – preventive medicine

- **Forensics**

- Dog ID
- Parentage



# Genetic Testing

- Breed background/heritage
- Diagnosis/prognosis/therapy
- Breeding
  - By show of hands at the meeting essentially all attendees had bought a genetic test for a dog, or advised someone to do one... or considered doing one.
  - ... and essentially all said they had confusion or unanswered questions about genetic testing.
- Breeding population
  - Marketing – preventive medicine
- Dog ID
- Parentage



# International Partnership for Dogs

International  
Partnership  
For Dogs



Founding partners and Collaborating Partners in IPFD



DogWellNet.com



International  
Partnership for Dogs

9 hours ago

Social on a Saturday...

<http://www.akc.org/.../research-genetic-code-dog-friendliness/>



Research Reveals the Ge...

Have you ever asked yourself why do...

AKC.ORG | BY AMERICAN KENNEL ...

# IPFD – health, well-being and welfare

- Multi-stakeholder
- International
- Sharing, collaborative
- Participatory



- Breed Clubs **provide** breed-specific info to our Breeds Database
- **Get** lots of resources... breed stats, education programs, research, breeding strategies, health surveys
- Expert opinion - blogs



# IPFD – health, well-being and welfare



## IPFD 3<sup>rd</sup> International Dog Health Workshop

International  
Partnership  
For Dogs



21 – 23 April / Avril 2017  
Paris, France



3<sup>ème</sup> Workshop International sur la Santé du Chien

International  
Partnership  
For Dogs





# IPFD Student Projects

## Skippy Frank Fund



**Kelly Arthur (2016)**  
**Colorado State**  
***Veterinarian's Role in  
the Ethics and Welfare  
of Breeding dogs***

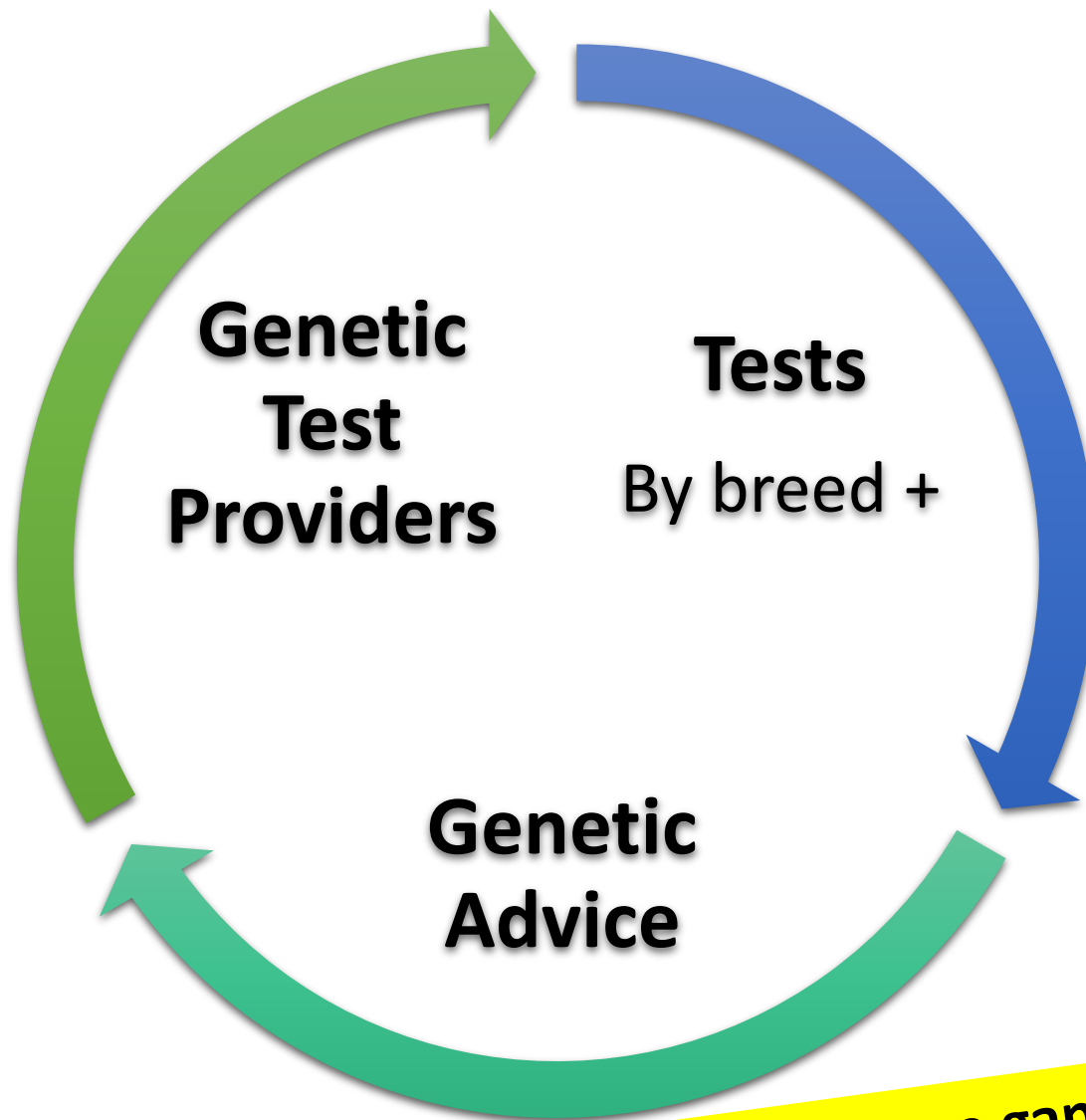


**Ariel Minardi (2017)**  
**Ohio State**  
***Antimicrobial Resistance  
Prudent Use of Antibiotics***



Harmonization of  
Genetic Testing  
for Dogs

The 'ideal': good quality labs providing accurate testing; only tests validated in general and by breed and region are reported; there is ample helpful advice about the meaning of the results and implications for use.



However – there are gaps. Therefore:





Harmonization of  
Genetic Testing  
for Dogs

**A collaborative open access **online resource****

- **The Quality Testing Database**
- **Genetic Counselling Resource**



Harmonization of  
Genetic Testing  
for Dogs

## WHY??

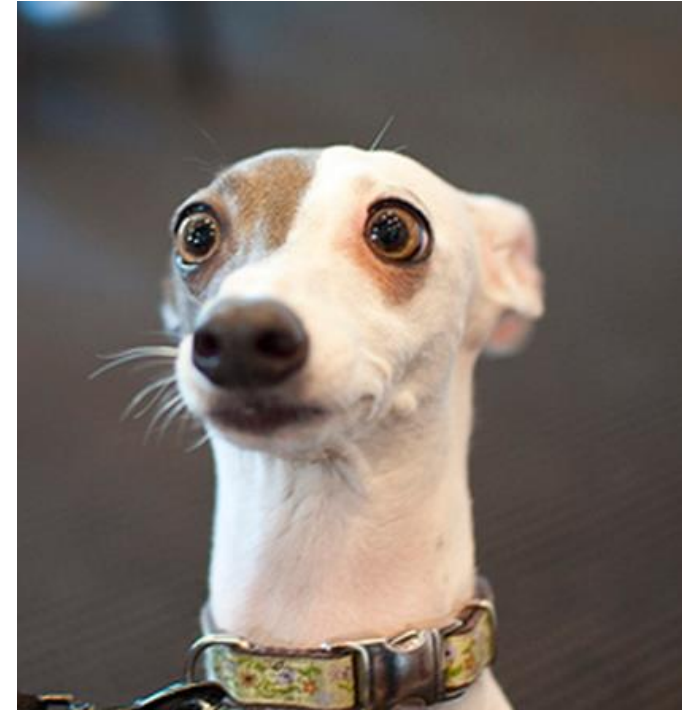
Exploding numbers of tests and laboratories and sales pitches and recommendations (and storms on FB!)

Individual owners and breeders, veterinarians, kennel clubs and breed club health committees are challenged

**“Good” DNA test providers are challenged to distinguish themselves from fancy websites**

**There is currently no quality control system for DNA testing in veterinary medicine**

**no standardized testing...no rules or regulations about who can offer tests, etc. etc.**



Harmonization of  
Genetic Testing  
for Dogs

## What does this mean?

- **NO oversight** for commercial test-providers or labs
- Variability in methods for obtaining test results / lack of transparency/no consistent reporting
- Wide range of providers, quality
- Little incentive for 'good' labs to maintain excellent quality control if consumers will simply use the cheapest offering (**and if nobody can compare quality**)

What does this mean? ... continued ....

- Inconsistent results; reports that are hard to understand
- Variable customer support for inaccurate or confusing results
- Reporting of findings for tests that have never been validated in a given breed.... etc. etc.
- Loss of confidence in genetic testing, in general



*Ultimately, the health of our dogs suffer, and we are more challenged than ever when trying to meet healthy breeding goals*



# Why IPFD? ... independent, multi-stakeholder, international ... and HOW ?

Initial Leadership Sponsors and members of steering committee.

International  
Partnership  
For Dogs



*Agria*   
*Djurförsäkring*



Harmonization of  
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# Current Harmonization Leadership Sponsors Aug 2017

Inclusive and Transparent



## The Resource:

- **Catalog information** provided **voluntarily** from genetic test providers (GTPs) for genetic testing (GT) in dogs
- **Describe quality assurance, activities, expertise, and resources;**  
*host expert panel reviews of genetic tests*
- Coordinate a program for **standardized proficiency testing**
- Collate/assemble existing and new resources for **genetic counselling and education**; and provide the foundation for further developments

# Harmonization of Genetic Testing for Dogs

## Homepage Within DogWellNet.com

Draft template only!

Not available to public until January 2018

IPFD

DogWellNet

Ann Milligan

Activity Streams Help Desk Create

Home Browse Breeds BrachyProject Harmonization Partners & Sponsors About IPFD

Search

Home > CTP Search

Unread Content Mark site read

IPFD

Harmonization of Genetic Testing for Dogs

PRESS RELEASE INITIATIVE DESCRIPTION

Harmonization Leadership Sponsors

Agria

Orivet

AHT

NEOGEN

SENDEL

VHLGenetics

OG

MARS

Quality Testing Database

Info for New Collaborators -- Join

Quality Assurance Guidelines

For consumers:

The outcome of genetic testing has a great impact on dogs, breeders and the population of breeds. These quality data comprise information about the laboratory or company offering genetic tests to help consumers make informed decisions.

This database benefits participating laboratories by describing their expertise, services, accreditation, quality measures and service.

Search by:

Lab / commercial test provider

Test/ disease

Breed

Genetic Counseling Phase II - Coming Soon

About

Expert List

Review of Labs

Genetic Tests -- Detailed information

Links to specific peer reviewed research, summaries and articles for individual stakeholders and groups.

Compendium for public

Compendium for professionals

Harmonization Of Genetic Testing News

Number of Labs

New Tests

Latest Updates in Counseling



International Partners...

338 likes



International Partnership for Dogs

1 hr

Piia Kallioinen, Member of the Breeding Committee of The Finnish Saluki Club, has graciously provided the English summary of the Finnish JTO - Saluki

Access the file in DWN Downloads at: https://dogwellnet.com/.../336-saluki-breeding-strategy-engl...



Home > CTP Search

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Community Software by Invision Power Services, Inc.



## For consumers:

The outcome of genetic testing has a great impact on dogs, breeders and the population of breeds. These quality data comprise information about the laboratory or company offering genetic tests to help consumers make informed decisions.

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## Search By:

- Breed
- Test/Disease
- Lab/ Certified Test Provider

**Draft template only!**  
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**until January 2018**



## The prototype: Basic GTP info, and “badges”

- Quality Measures
- certification / SOPS
- discovery
- location

### Quality Testing Database Search

#### Labs/CTP's

##### Optigen

767 Warren Road, Suite 300  
Ithaca ,New York US

HGTD In House Testing Lab ISO Certified

##### VHL Genetics

Agro Business Park  
WagenIngen NL

HGTD In House Testing

##### Orivet Genetic Pet C

Suite 102/163-169 Inker  
PO BOX 110 (postal det  
St Kilda ,Victoria AU

HGTD Lab ISO Certified

##### Genoscooper Laborato

+358 50 3678 282  
Genoscooper Laboratories ,F

HGTD In House Testing Lab ISO Certified In House Test Discovery Research Collaboration

##### Sentinel Biomedical Inc

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CTP details with links

- personnel / qualifications
- research
- test mishandling protocol
- patents/ licences
- genetic counselling

## Optigen

HGTD

In House Testing

Lab ISO Certified

Test ISO Certified

In House Test Discovery

For Profit

### Contact Information

Website(s) <http://www.optigen.com/>  
Email [genetest@optigen.com](mailto:genetest@optigen.com)  
Phone 607-535-1234  
Address 1234 Main St, Albany, NY 12202

### People

### Testings

In House  
Out Source

### Accreditation

ISO - Lab  
ISO - Tests ISO9001

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The  
prototype:  
BREED

Search Term: Poodle, standard

## Results

### Von Willebrands Disease Type I

Gene Name: VWF  
Mutation: c.7142C>T  
OMIM: 193400277480  
OMIA: 001057-9615

### Progressive Retinal Atrophy, rcd-4

Gene Name: C2orf71  
Mutation: c.3149\_3150insC  
OMIA: 001575-9615

### Progressive Retinal Atrophy, prcd

Gene Name: prcd  
Mutation: c.5G>A  
OMIM: 600852  
OMIA: 001298-9615

### Degenerative Myelopathy

Gene Name: SOD1  
Mutation: c.52A>T  
OMIM: 105400  
OMIA: 000263-9615

### Neonatal Encephalopathy with Seizures

Gene Name: ATF2  
Mutation: c.152T>G  
OMIA: 001471-9615

### Day Blindness/Retinal Degeneration

Mutation: unpublished

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The  
prototype:  
BREED

# Neonatal Encephalopathy with Seizures

Synonyms/Related Terms :

## General

Breeds

Poodle, standard

CTP'S

Optigen

VHL Genetics

Embark Laboklin On the Border Missouri VHL

Test Type

Genetic Disease

Gene Name

Mutation

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**Disease Details** Born smaller and fail to nurse normally. Weakness, trouble moving, whole-body tremors (3 weeks of age). Clonic-tonic seizures ( 4-6 weeks of age) - fdeath around 7 weeks of age.

### Published

Chen, X., Johnson, GS., Schnabel, RD., Taylor, JF., Johnson, GC., Parker, HG., Patterson, EE., Katz, ML., Awano, T., Khan, S., O'Brien, DP. : A neonatal encephalopathy with seizures in standard poodle dogs with a missense mutation in the canine ortholog of ATF2. Neurogenetics 9:41-9, 2008. Pubmed reference: 18074159. DOI: 10.1007/s10048-007-0112-2.

### Comments/Application in Breed(s)

Carriers may be bred to normal animals (N/news x N/N) . Offspring should be screened.  
No breeding of two carriers (N/news x N/news)

**Organ System** neurologic

**Mode of inheritance** AR

[Link](#)

**Prevalence** Of 1038 standard poodles genot

**Carrier frequency** (Donner, et. al.) 5.90%

[LINK](#)

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# Working groups established at International Dog Health Workshop in April 2017

- Prevalence data for defined populations
- Proficiency Testing
- DNA test evaluation templates
- Genome Research and Information Resource: “phene” descriptors
- Key descriptors of laboratory quality measures



- **Access to broad community of experts, resources, disciplines, etc.**
  - **Collective opinion; breadth and depth**
- **Link with other IPFD resources** – breed health surveys, breeding strategies from other countries, templates for ranking problems within a breed, .....



## Next steps:

- Fall 2017 – Beta version for sponsors
- Jan 2018 Launch of public QM database resource/platform
- 2018/on-going development
  - Test evaluation
  - Proficiency Testing
  - **Genetic advice/counselling**
    - How much and how fast depends on funding/ resources

# Get involved 2017/2018

- **Industry partners, GTPs:**
  - Become a Leadership Sponsor
- **Individuals / Experts**
  - Forum participation
  - Expert assistance and genetic advice
- **Breed Clubs**
  - Participate in [DogWellNet.com](http://DogWellNet.com)
  - USA: Support CHF Grant 2328-A

# Thank you

- Our Harmonization Sponsors – including CHF and OFA
- Participants of the Dog Health Workshops
- IPFD Partners - including the AKC

*Find out more at [DogWellNet.com](http://DogWellNet.com)*

*- Sign Up and Sign In*

- And YOU





**Partnership !**

**Communication !**