

# AGENDA

## Potter Park Zoo Board

1301 S. Pennsylvania Avenue ~ Lansing, MI 48912  
Telephone: 517.342.2776; Fax: 517.316.3894

The packet is available on-line by going to [www.ingham.org](http://www.ingham.org), choosing the "Monthly Calendar" and click on Wednesday, April 9, 2014.

**Wednesday, April 9, 2014**

**at 5:45 pm**

### **POTTER PARK ZOO BOARD MEETING**

**Potter Park Zoo, Education Building,  
1301 S. Pennsylvania Ave., Lansing, Michigan**

1. **Call to Order**
2. **Approval of Minutes**  
Minutes of March 12, 2013 will be considered
3. **Limited Public Comment** – *Limited to 3 minutes with no discussion*
4. **Late Items/Deletions/Consent Items**
5. **Introduction of New Zoo Board Member, Monica List**
6. **OLD BUSINESS**
  - A. Moose Exhibit Update
  - B. Hospital Update
  - C. Strategic Planning
8. **NEW BUSINESS**
  - A. Resolution Honoring Park Ranger Nickolas Wagner
  - B. Resolution Authorizing Shelter Fee Changes for Ingham County School Groups
  - C. Charitable Event Group Admission Rates
9. **DIRECTOR AND FINANCIAL REPORTS**
  - A. Zoo Director's Report – Sherrie Graham
  - B. Financial Report – Dan Halfmann
10. **Board Comments**
11. **Limited Public Comment** - *Limited to 3 minutes with no discussion*
12. **Informational Items**
  - A. Thank You Letters
  - B. Article on "Humoral Response to Calicivirus in Captive Tigers Given a Dual-Strain Vaccine," by Dr. Tara Harrison printed in Journal of Zoo and Wildlife Medicine
  - C. Thank You from Pat Fountain, Zoo Keeper
13. **Upcoming Meeting**
  - A. Zoo Board Meeting on **May 14, 2014** at the Potter Park Zoo, Education Building.
14. **Adjournment**

Official minutes are stored and available for inspection at the address noted at the top of this agenda. The Potter Park Zoo will provide necessary reasonable auxiliary aids and services, such as interpreters for the hearing impaired and audio tapes of printed materials being considered at the meeting for the visually impaired, for individuals with disabilities at the meeting upon five (5) working days' notice to the Potter Park Zoo. Individuals with disabilities requiring auxiliary aids or services should contact Potter Park Zoo by writing to the Potter Park Zoo, 1301 S. Pennsylvania Ave., Lansing, MI 48912 or by calling 517.342.2776.

**“DRAFT” MINUTES OF THE MEETING**  
**INGHAM COUNTY POTTER PARK ZOO BOARD**  
**1301 S. Pennsylvania Avenue, Lansing, MI 48912**  
**March 12, 2014**

The Ingham County Potter Park Zoo Advisory Board held a regularly scheduled meeting at the Potter Park Zoo, 1301 S. Pennsylvania Ave., Education Bldg./Coral Reef Room, Lansing, Michigan

**BOARD MEMBERS**

**PRESENT:** Commissioner Nolan, Commissioner Tsernoglou, Dr. Snider, Chair John Groen, Jennifer Flood, Kyle Binkley, Rick Kibbey, & Kevin Feuka

**ABSENT:** Mary Leys, George Berghorn, Aaron Davis, & Monica List

**ALSO PRESENT:** Sherrie Graham, Zoo Director; Teresa Masseur, Recording Secretary; Dan Halfmann, Financial Services; Amy Morris, Martin Waymire Advocacy; & Willis Bennett, Director of the Ingham County Parks Department

**CALL TO ORDER** Chair, John Groen called the regular meeting of the Ingham County Zoo Advisory Board to order at 5:49 pm.

**MINUTES:** Moved by Dr. Snider to approve and supported by Commissioner Nolan to approve the February 12, 2014 minutes of the regular meeting as written, **Yes-6; No-0; Abstained-1 Kevin Feuka. MOTION CARRIED.**

**LIMITED PUBLIC COMMENT**

None

**LATE ITEMS/DELETIONS/CONSENT ITEMS**

Delete Item #5 as Monica List was not present.

**INTRODUCTION OF NEW ZOO BOARD MEMBER, MONICA LIST**

This was deleted from the agenda.

**2014 MARKETING PLAN PRESENTATION – AMY MORRIS**

Ms. Morris works at Martin Waymire which is a public policy firm. They also do other things like communications and marketing and she is here to talk about the 2014 Public Relations and Marketing Plan for the zoo. Strategically, they would like to make communication a priority for the zoo. They have the following goals set; recruit and retain members; have more people through the gate; higher attendance for events; and more participation in education programs. The website is really beautiful and they would like to make it is easier to navigate and also to keep the content updated like the blog post and calendar. There is an electronic newsletter which is scheduled throughout the year. The traditional newsletter is going through a transition now. There are really great stories at the zoo and the animal collection is just fabulous and there is wonderful imagery, so this is also a great tool for recruiting new members. Social Media is something her firm spends a lot of time on because it's so positive, fun and wonderful. On Facebook, when they first started, there were 14,500 followers and now it's up to 17,500. They also are involved with Twitter, Instagram, and Pinterest. The social media is really growing and it's because people love to know what's going on in the zoo. With paid advertising, they will do a little advertising on Facebook. With traditional media, they talk about the animals' births and acquisitions/dispositions of animals too. She would like to do more with paid advertising, and they are doing some with events like Wine and Stein.

Mrs. Graham asked what are the other types media are being used and are we using billboards.

Rick Kibbey came in at 6:13 pm.

Ms. Morris said nothing is finalized. She also added there was a lot of creative and it's the top of the line with using Cesa as they are very creative. They know the digital billboards are hard to measure as they do eight rotations and they looked at the cost per impression and decided it was probably better to go and hand out \$20 bills to people. They will be using traditional billboards which knocked the cost down and will also be using Pandora radio when pushing events. The money that they saved they will be using on Facebook to target demographics.

Commissioner Nolan asked about the MSU students and if they plan on targeting them at all.

Ms. Morris said the social media does not match our attendance and we don't know where the visitors come from and why.

Dr. Snider said he would like to market to the MSU students and he's offered their help in the past with parking and etc., but it has never happened.

Ms. Morris said yes, she will try to target them.

Dr. Snider gave a handout from WAZA and said there is a lot of statistics in this handout.

Chair Groen asked if she could give them a report on a measurable impact of the paid advertisement budget and one for the forecast if you increase your ad spending and he would like to see if it would boost demand for membership and attendance. He just wants some way to measure the effectiveness of the advertisement.

Commissioner Tsernoglou asked if people from the board can contact Amy directly.

Mrs. Graham said yes, she sends stuff to Ms. Morris all the time.

Commissioner Nolan stated she feels this is really important as they are moving towards a milage renewal to document those public relations dollars.

## **OLD BUSINESS**

### **Moose Exhibit Update**

Mrs. Graham stated there is nothing new to report.

Mr. Feuka asked when are we looking to build the moose exhibit.

Mrs. Graham said when we get the money

Mr. Feuka asked what will we do with the moose in the meantime

Mrs. Graham said the moose is fine and we can keep her for a 1 ½ half where she's at now.

Mr. Feuka asked where is that now.

Mrs. Graham said she is at the clinic now and she can be moved into the Oryx yard.

### **Hospital Financials**

Mrs. Graham said there was a kickoff session with the architects last Tuesday and Wednesday and there were the stakeholders at the table along with everyone from the Director of IT to the Dean of the Vet school. They came up with a plan and timeline to receive the first renderings.

### **Strategic Planning**

Chair Groen stated there is a need for important focus groups of zoo boards, docents, members, and civic leaders to have a voice at the table and to have a timeline.

Ms. Morris said she wants to make sure that it happens this season.

Chair Groen said there will be a kickoff in April and every department will have a voice.

Ms. Morris stated she and Mrs. Garnett will be going around to all departments.

Chair Groen said all departments will have two representatives. There will be a committee which takes all this input from all of the groups, prioritizes and then begins to build the strategic plan.

Ms. Morris said there will be a number of ideas and they will ask for the top three.

Chair Groen said with the small groups, they will need to have their ideas prioritized as they want to make sure that this is a well thought out strategic plan as they have learned some lessons from the master plan.

Ms. Graham said it should be ready to present the drafts to the Boards at the beginning of September.

**NEW BUSINESS**

**Resolution Recommending Submission of a Grant Application to the Department of Natural Resources  
Trust Fund for an Accessible Playground at Potter Park  
Resolution #14-04**

WHEREAS, the Ingham County Parks Facility Master Plan was developed under the direction of the Ingham County Board of Commissioners to establish a systematic plan to meet the goal of providing adequate recreational facilities for the residents of Ingham County; and

WHEREAS, constructing an accessible playground at Potter Park was included in the 2012-2016 Parks Facility Master Plan; and

WHEREAS, CASE CARES, a community based foundation of the Case Credit Union, offered to construct an accessible playground at Potter Park at no cost to the County; and

WHEREAS, CASE CARES has held several fundraising events and secured donations and grants towards the construction of the playground and supports the Ingham County Park's Department application for Michigan Department of Natural Resources (MDNR) Trust Fund Grant for Potter Park; and

WHEREAS, CASE CARES has agreed to donate \$70,000 as the necessary 25% match for the grant; and

WHEREAS, the Ingham County Parks Department will be the recipient of the grant funds and will assist in the administration of the grant, thus limiting staff time of the Potter Park Zoo management team; and

WHEREAS, the playground construction oversight will be provided by a representatives of Miracle Recreation Equipment Company and volunteers will be utilized, and

WHEREAS, if the grant application is approved, construction of the playground will take place during 2015.

THEREFORE BE IT RESOLVED, that the Potter Park Zoo Board recommends to the Ingham County Board of Commissioners that a grant application be submitted to the Michigan Department of Natural Resources Trust Fund for the construction of an accessible playground at Potter Park.

Moved by Commissioner Tsernoglou and Supported by Commissioner Nolan that resolution #14-04 be approved. (Yes-7; No-0).  
MOTION CARRIED.

Mr. Bennett talked about this resolution and about long it has taken, but it's been due to the economy and he wants to see this finished before he leaves the County. Back in 2008, CASE CARES had no idea how hard it would be to raise money at that time. At the present time, the zoo and parks is still part of the parks master plan. They have committed \$70,000 and the DNR trust requires them to have at least 25% down. This will not create a stress for any of the staff at all, but my staff will be taking care of the administrative part as that is very simple. It will require a little ground work with maintenance staff as they already have the equipment and there will be some landscape. There is very little cost to the park. There will be very little expense for maintenance of this playground and this will be one of a few structures in the City of Lansing which will be assessable. It will be placed west of the existing playground, so everyone will be playing together. There have been some comments from adults that are in wheelchairs and how they will be able to play too.

Mrs. Graham asked about who will be providing the supervision over this project and volunteers and if this needs to be provided by Potter Park, could he send his own parks people over to do this.

Mr. Bennett said oh no the company, Miracle, will be providing the representatives to supervise the volunteers.

Discussion ensued. It was decided to change the 2<sup>nd</sup> whereas from the bottom.

**Resolution #14-03**

WHEREAS, the Parks & Recreation Commission adopted a shelter waiver policy amendment (Resolution #21-10) for Ingham County Parks which included Potter Park; and

WHEREAS, now that the Potter Park Zoo and Potter Park are a separate entity of Ingham County; and

WHEREAS, the Potter Park Zoo would like to change the waiving of shelter fees for Ingham County school groups, and charitable organizations for events held Monday through Friday; and

WHEREAS, a cost is associated with the amount of cleanup, supplies, and staff time involved with the shelter rental; and

WHEREAS, the recommended fees below supersede all previous resolutions relative to shelter waiver policies; and

WHEREAS, the fees to be changed are as reflected below:

<b>SHELTER FEES</b>	<b>Current Fees</b>	<b>Recommended Fees</b>
60 Person	\$50	Same
80 Person	\$75	Same
300 Person	\$150	Same
Split	\$80 - ½ (150 Person)	Same
School Groups	Free	\$25

THEREFORE BE IT RESOLVED, that the Potter Park Zoo Board recommends to the Ingham County Board of Commissioners to adopt the recommended fee structure for the Potter Park shelters which should take effect May 1, 2014.

Moved by Commissioner Tsernoglou and Supported by Commissioner Nolan that resolution #14-03 be approved. (Yes-7; No-0).  
MOTION CARRIED.

Mrs. Graham said this is the draft that the board had asked her to bring as they had discussed this at the last meeting. It is a twofold purpose resolution as they will need to call and reserve the pavilions and not just show up, and second, there is a cost for cleanup for getting it ready and cleaned afterwards. This would only be applicable to school groups and non-profits Monday thru Friday as Ingham County School children currently get in the zoo for free. It's a booking and an accounting practice.

Commissioner Nolan said it's a reasonable fee and as a former teacher, if everything is for free, then there is no value. This will make it more accountable.

Mrs. Graham said this is more of a perceived value this way.

Discussion ensued.

**ZOO DIRECTORS REPORT**

Mrs. Graham said there is a written report from her. The HB5163 needs considerable work before it goes to a vote. The partnership with Fenner is on hold as they are losing their education team. The female Tiger, Nikka, our mamma tiger will be transferred to John Ball for breeding which is illegal in Michigan right now until the legislative issues are resolved. The camel and train vendors have decided not return this season, but there is a new camel vendor which is coming instead. The male Penguin is going to Zoo Boise soon. The keepers are starting an AZAK Chapter here at the zoo. They will be working on fundraising and their money will be going to field conservation. One of the big fundraisers will be "Bowling for Rhinos." The Emergency Management Team for the City had met here at the zoo and there are plans in place internally for the staff and the animals if needed. If an extreme emergency occurs before the completion of the at-grade crossing, then they have a temporary one that can be installed in a matter of a few hours. At the request of Chris Vehrs, the Executive Director of AZA, she had asked her to be nominated to a national committee, and therefore, she will be attending the mid-year conference. The Animal Welfare Committee will be meeting monthly and there has been a whistle blower policy put into place. There are some uniform changes coming and they are in the process of writing new policies which will require a letter of understanding for the union. Mr. Halfmann and she have been working on the County Strategic Plan and she will pass it around to everyone. More on a personal note, her mom had a stroke last Saturday and is going downhill rapidly and she will be 97 soon, so she could be gone for several days. She also talked to other zoo directors about veteran discounts and they offer a discount or free admission on Veterans Day, but they have to show some type of ID.

**FINANCIAL REPORTS**

Mr. Halfmann said there's not much to report for the first two months of the year. The first page is a comparison of February to 2013. There was a journal entry made last year of \$12,000 and there is no millage money recorded yet but will be next June. Item b, is the same issue which is a comparison in salary and wages for fulltime, and it was due to an extra payroll in January in 2014 and not in 2013. Usually there are more payrolls in the months of March and September. Item c, is advertising monies, last year we received \$60,000 earlier than this year. On page 2, there is a simple February report which takes the whole fiscal budget for 2014 and then two months are taken out of it for 2014. Item a, is a note on how we average \$270,000 and we are at \$403,000. On Page 3, is the stats page and it's not a very impressive compared to last year. It was a much more milder winter compared to this year's winter, but overall we are down 62.5% or down 1,800 visits on a year-to-date comparison to 2013.

**BOARD COMMENTS**

Commissioner Nolan asked what is field conservation.

Mrs. Graham said it means protecting/improving the natural/native habitat of the animals we exhibit. For example, we have a moose and will spend x number of dollars on that exhibit. The AZA would like a portion of the money which is raised to go for supporting the natural wild habitat of that species. The zoo should also be talking with all of the patrons about field conservation as well.

Dr. Snider asked if there is any plans for a Potter Park Zoo trip or expedition to Africa and cheaper is not always better and so you need to be real careful.

Mrs. Graham said she's been getting lots of information on those types of trips.

Mr. Feuka stated if you have not made your donations yet to the big banquet at the U Club, please make sure that you do and if you don't have the link let him know.

**LIMITED PUBLIC COMMENT**

None

**ADJOURNMENT**

Being no further business, the meeting was adjourned at 7:08 pm.

Teresa Masseur  
Recording Secretary

# POTTER PARK ZOO BOARD

Meeting of March 12, 2014  
**RESOLUTION #14-03**

**RESOLUTION RECOMMENDING SHELTER FEE CHANGES  
FOR INGHAM COUNTY SCHOOL GROUPS**

**WHEREAS**, the Parks & Recreation Commission adopted a shelter waiver policy amendment (Resolution #21-100) for Ingham County Parks which included Potter Park; and

**WHEREAS**, now that the Potter Park Zoo and Potter Park are a separate entity of Ingham County; and

**WHEREAS**, the Potter Park Zoo would like to change the waiving of shelter fees for Ingham County school groups, and charitable organizations for events held Monday through Friday; and

**WHEREAS**, a cost is associated with the amount of cleanup, supplies, and staff time involved with the shelter rental; and

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**THEREFORE BE IT RESOLVED**, that the Potter Park Zoo Board recommends to the Ingham County Board of Commissioners to adopt the recommended fee structure for the Potter Park shelters which should take effect May 1, 2014.

**Moved** by Commissioner Tsernoglou and **Supported by** Commissioner Nolan that resolution #14-03 be approved. (Yes-7; No-0). **MOTION CARRIED.**

# THANK YOU



American Red Cross

Dear Potter Park Zoo,

Thank you very much for the one year family membership donated for our upcoming volunteer appreciation event. Your support of our community and Red Cross volunteers is greatly appreciated!

Sincerely,  
Jeanette Saint-Onge  
American Red Cross





# Byron Fireworks Friends

## 2014 Certificate of Appreciation

# Potter Park Zoological Society

Provided as an expression of our genuine gratitude for the support demonstrated by your generous contributions to our annual Auction. Your continued support allows us to reach our goal in providing the brilliant fireworks display in the Village of Byron on the second Saturday in July each year.

*President – Ken Beard Jr.*



Michigan Parent Teacher Association  
1390 Eisenhower Place  
Ann Arbor, MI 48108  
(Phone) 734-975-9500 (Fax) 734-677-2407

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*Michigan PTA mobilizes the forces of school, home, and community in order  
to ensure a quality education and nurturing environment for every child.*

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April 1, 2014

Memberships  
Potter Park Zoological Society  
1301 S. Pennsylvania Ave.  
Lansing, MI 48912

Dear Sir or Madam,

Thank you for your Silent Auction donation for the Michigan PTA's upcoming 96th Annual Convention. Your generous contribution will enable us to raise additional funds to support the mission of the Michigan PTA. The name and value of your donated item are listed below:

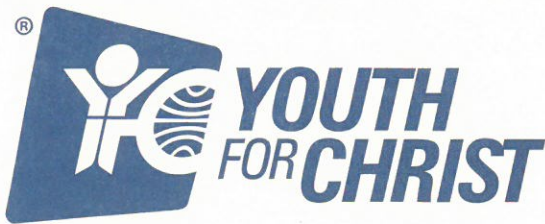
**Item: 1-year Family Membership**  
**Value: \$60**

Michigan PTA is a non-profit 501(c)(3) association and your donation is a tax deductible contribution to the extent allowed by law. Please contact your accountant to determine the exact amount of your tax deduction.

Do not hesitate to contact me if you have any questions at [director@michiganpta.org](mailto:director@michiganpta.org) or 734-975-9500. Thanks again for your support.

Sincerely,

Sandra York  
Executive Director



P.O. Box 80555  
Lansing, Michigan 48908

(517) 322-2091  
FAX 322-4932

CAMPUS LIFE \* JUVENILE JUSTICE MINISTRIES \* TEEN PARENTS

Thursday, March 20, 2014

Potter Park Zoo  
1301 S Pennsylvania  
Lansing, MI 48912-1646



Dear Potter Park Zoo:

Thank you very much for your contribution of a 1 year family membership for our 2014 Auction and Dessert Extravaganza, this year at Our Savior Lutheran Church. The fifth annual event on Saturday, March 8th netted about \$12,000 for YFC.

You have the privilege and responsibility of determining the value of the gift(s) for tax purposes, and this non-cash gift will not be reflected on your year-end statement from us.

Greater Lansing Youth for Christ appreciates your support of our ministry to "communicate the life-changing message of Jesus Christ" to Lansing area teenagers.

Sincerely,

Dave Burkholder, Operations Manager

THANK YOU!!!!



## RAINBOW HOMES

WOULD LIKE TO THANK YOU FOR ANOTHER SUCCESSFUL SILENT AUCTION.

WE COULDN'T HAVE DONE IT WITHOUT YOU.

BECAUSE OF YOU AND MANY OTHERS WE WERE ABLE TO PROFIT OVER \$10,000.

What an exciting event. Lots of great food, fun, prizes, and music.

WE ARE PLANNING TO HOLD NEXT YEAR'S SILENT AUCTION: Feb. 7<sup>th</sup>, 2015 at the same fantastic location: St. Casimir. HOPE TO SEE YOU THERE.

### **REMINDER: 2<sup>ND</sup> ANNUAL RAINBOW HOMES GOLF TOURNAMENT**

SEPTEMBER 28, 2014 – Timber Ridge Golf Course

For more details and to set up a team: <http://www.rainbow-homes.org/fundraising.html#golfouting>

March 19, 2014

Sherrie Graham  
Potter Park Zoo  
1301 S. Pennsylvania  
Lansing, MI 48912



2111 Adelpha Ave., Apt. B Holt, MI 48842  
Phone: 517-699-8454 • Fax: 517-699-8454  
rainbowhomes@sbcglobal.net  
Website: www.rainbow-homes.org

Dear Sherrie,

Thank you for your generous donation of the Four Tickets to the Zoo for our Silent Auction & Dinner held at St. Casimir Parish in Lansing on February 8, 2014. This fundraiser benefited RAINBOW HOMES, a Christian non-profit supported living program for adults with cognitive disAbilities in Holt, Michigan.

Because of YOU and other donors like you, our Silent Auction and Dinner was a complete success, profiting over \$10,000. This year our theme was "Cruising Along with Rainbow Homes". Over 200 people attended this annual fundraiser.

As a donor, you received recognition by having your name/business listed on the basket, bid sheet, in our auction program on our website and a print copy received at the auction.

With this special event we are able to continue to provide a Christian home-like setting for 30 adults with disAbilities. With your help:

Residents are being supported in discovering their God given potential, encouraging each resident to realize their hopes, dreams, and wishes for the present and future.

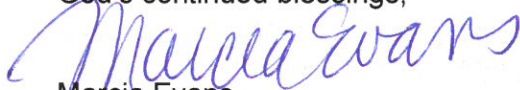
Our staff support and work with our residents with a focus placed on their Abilities to enhancing their life skills and creating opportunities for them to experience their independence.

We are planning to hold this Silent Auction and Dinner again next February. We hope that we can count on you for a donation.

Thank you again for your contribution to our fundraising effort. We recognize and appreciate your support. Photo's of our event will be placed on our website soon!

Rainbow Homes Non-Profit Housing Corporation 501(c) 3 Federal Identification Number: 38-3457782. In accordance with the tax laws and Internal Revenue Code, we are confirming that you did not receive any goods or services in exchange for this donation.

God's continued blessings,



Marcia Evans  
RH Executive Director



**Children's Trust Fund**  
*Protecting Michigan's Children*

March 24, 2014

**Board of Directors**

Lorinda M. Wortz, Chair  
*Religious Community*

Sgt. Yvonne D. Brantley  
*State Police*

John H. Brown  
*Private Sector*

Lisa R. Canada  
*Organized Labor*

Mark A. Davidoff  
*Business Community*

Lena Epstein Koretzky  
*General Public*

Shelley A. Kester  
*Volunteers*

Karl T. Ieuter  
*General Public*

Mark S. McDaniel  
*Parents*

Brian J. Rooney, Esq.  
*Human Services*

Andra M. Rush  
*Business Community*

Vivek S. Sankaran  
*Legal Community*

Deb L. Shaughnessy  
*General Public*

Carol L. Wolenberg  
*Public Instruction*

Michael D. Foley  
*Executive Director*

Samantha Friedlander  
Potter Park Zoological Society  
1301 S. Pennsylvania Ave.  
Lansing, MI 48912

Dear Ms. Friedlander:

On behalf of the Children's Trust Fund (CTF), thank you for your generous auction item donation, valued at **\$60**, to the ***Pam Posthumus Signature Auction Event***. I hope you'll be able to join us for this year's auction, which takes place on **Wednesday, May 14, 2014, beginning at 5:00 p.m. at the Lansing Center**. For your convenience, enclosed is a Ticket Purchase Form.

The Children's Trust Fund is a statutorily independent, non-profit organization solely dedicated to the prevention of child abuse and neglect in Michigan. CTF receives no state funding and fulfills its mission using charitable fundraising activities and grants. Thanks to you and others like you, CTF is able to fund over 20 community-based direct service programs and 73 local Child Abuse and Neglect Councils throughout the state. These programs offer a variety of services including, but not limited to, public education, sexual abuse prevention, prenatal education, and temporary emergency shelter for homeless youth.

For tax purposes, please retain a copy of this letter.

Thank you for being a Children's Trust Fund Partner in Prevention!

Sincerely,

Michael D. Foley  
Executive Director

CTF Taxpayer Identification Number -- 38-6000134

The Children's Trust Fund was created by the Michigan Legislature in 1982 as a charitable & educational endowment fund under the IRS Code 170(c). For additional information on tax deductibility, please consult your tax preparer.



**Prevent Child Abuse**  
Michigan





Sherrie Graham  
Zoo Director  
1301 S. Pennsylvania Ave.  
Lansing, Mi 48912

Dear Sherrie,

Foster Care Supportive Visitation would like to thank you for the admission tickets that you sent to us in order to use for our clients.

Our clients benefited greatly from being able to explore our community and the wonderful activities available such as Potter Park Zoo.

We are currently serving 33 families within 7 counties and we are happy to see growth within our program. With spring around the corner, we would greatly appreciate it if it would be possible to donate more tickets for us again this year.

Thank you again.

Sincerely,

Micah Lurie  
4287 Five Oaks Drive  
Lansing, Mi 48911  
(517) 803-9150  
[micah@childandfamily.org](mailto:micah@childandfamily.org)

March 10, 2014



Potter Park Zoological Society  
Potter Park Zoo  
1301 S. Pennsylvania  
Lansing, MI 48912

2111 Adelpha Ave., Apt. B Holt, MI 48842  
Phone: 517-699-8454 • Fax: 517-699-8454  
rainbowhomes@sbcglobal.net  
Website: www.rainbow-homes.org

Thank you for your generous donation of the Family Year Pass for our Silent Auction & Dinner held at St. Casimir Parish in Lansing on February 8, 2014. This fundraiser benefited RAINBOW HOMES, a Christian non-profit supported living program for adults with cognitive disAbilities in Holt, Michigan.

Because of YOU and other donors like you, our Silent Auction and Dinner was a complete success, profiting over \$10,000. This year our theme was "Cruising Along with Rainbow Homes". Over 200 people attended this annual fundraiser.

As a donor, you received recognition by having your name/business listed on the basket, bid sheet, in our auction program on our website and a print copy received at the auction.

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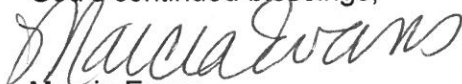
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Marcia Evans  
RH Executive Director



THANK YOU!!!!



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For more details and to set up a team: <http://www.rainbow-homes.org/fundraising.html#golfouting>

Dear Sammy,

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## HUMORAL RESPONSE TO CALICIVIRUS IN CAPTIVE TIGERS GIVEN A DUAL-STRAIN VACCINE

Tara M. Harrison, D.V.M., M.P.V.M, Dipl. A.C.Z.M., Scott H. Harrison, Ph.D., James G. Sikarskie, D.V.M., M.S., Dipl. A.C.Z.M., and Douglas Armstrong, D.V.M.

**Abstract:** The current feline vaccine with a single strain of calicivirus has been used for captive tigers, yet it may not protect against virulent systemic calicivirus infections. A cross-institutional study investigated the humoral response to a new dual-strain, killed-virus calicivirus vaccine for nine captive tigers. The subspecies of these tigers were Amur (*Panthera tigris altaica*), Bengal (*Panthera tigris tigris*), and Malayan (*Panthera tigris jacksoni*). Serum neutralization titers for virulent feline calicivirus strain FCV-DD1 were higher following dual-strain vaccine administration. There were no reports of adverse vaccine reactions. Dual-strain vaccination may afford broadened cross-protection against different calicivirus strains and is desirable to reduce the risk of virulent systemic calicivirus disease in tigers.

**Key words:** Feline calicivirus, tiger, vaccine.

### INTRODUCTION

Feline calicivirus (FCV) is a cause of upper respiratory tract disease that may be accompanied by fever, tissue inflammation, and pneumonia. Some recently identified strains of FCV have been causing virulent systemic disease, a disease with increased morbidity and mortality. Outbreaks in domestic cats have had mortality rates as high as 40%,<sup>8,14,15,16</sup> but nondomestic felids are also expected to be at risk.<sup>6</sup> Due to the emergence of new strains of calicivirus, reassessing commonly used vaccination protocols may be necessary, especially given the endangered status of many nondomestic felid species.

A new dual-strain, killed-virus, feline calicivirus vaccine provides experimental protection against one of the virulent systemic calicivirus strains, DD1, in domestic felids. This vaccine has killed virus of FCV-255, a traditional field strain, and FCV-DD1, a virulent systemic calicivirus strain. It elicits the formation of neutralizing antibodies against a majority of calicivirus and virulent systemic calicivirus isolates in domestic cats.<sup>7</sup> This current study used a two-dose protocol for calicivirus vaccination in nondomestic felids, with

a booster of the FCV-DD1 isolate 3–4 wk after the initial vaccine, to evaluate the safety of this dual-strain vaccine and measure serum neutralization titers. Vaccination with the dual-strain vaccine was preceded by that of a single-strain, killed FCV-255 vaccine. FCV-255 is not a virulent systemic calicivirus, but the use of the FCV-255 vaccine is common among zoos.

### MATERIALS AND METHODS

Humoral response to the dual-strain vaccine was surveyed for nine tigers from three institutions based on their having a complete report of both pre- and postvaccination titers for each tiger. At a mean of 10.7 ( $\pm 5.2$ ) mo prior to the initiation of this study, each of the tigers was vaccinated with a single-strain, killed FCV-255 vaccine (PCH; Fort Dodge Fel-O-Vax PCT: feline panleukopenia virus, feline calicivirus strain 255, and feline herpesvirus 1; Fort Dodge Animal Health, Fort Dodge, Iowa [now Boehringer Ingelheim, St. Joseph, Missouri 64503, USA]; 1 ml i.m. or s.c. depending on the institutional veterinarian's preference). All tigers in this study were immobilized for physical examinations with various anesthetic protocols at the initiation of the study. All tigers were vaccinated during their physical examination with a novel killed, dual-strain calicivirus vaccine (PCCH; Fort Dodge Fel-O-Vax PCT + Calicivax: feline panleukopenia, feline calicivirus strains 255 and DD1, and feline herpesvirus 1; Fort Dodge Animal Health; 1 ml, i.m. or s.c. depending on the institutional veterinarian's preference). Some of the tigers that did not require anesthesia had titers measured up to a week before PCCH vaccination. Otherwise, blood was collected at the time of immobilization to determine the serologic status

From the College of Veterinary Medicine, Michigan State University, A226 Veterinary Medical Center, East Lansing, Michigan 48824, USA (T. Harrison, Sikarskie); the Potter Park Zoo, 1301 South Pennsylvania Avenue, Lansing, Michigan 48912, USA (T. Harrison); the Department of Biology, North Carolina A&T State University, 13 Barnes Hall, 1601 East Market Street, Greensboro, North Carolina 27411, USA (S. Harrison); and the Henry Doorly Zoo, 3701 S. 10th Street, Omaha, Nebraska 68107, USA. (Armstrong). Correspondence should be directed to Dr. T. Harrison (taramharrison@gmail.com).

**Table 1.** Summary data for surveyed tigers.<sup>a</sup>

ID	Tiger subspecies	Age (years)	Sex
1 <sup>b</sup>	Amur	2	Female
2 <sup>b</sup>	Amur	2	Female
6	Amur	3	Female
10	Amur	7	Female
11	Amur	14	Female
12 <sup>b</sup>	Amur	2	Male
14	Amur	1	Male
17	Bengal	2	Male
18	Malayan	19	Female

<sup>a</sup> ID = tiger identification number.

<sup>b</sup> Indicates natural exposure to a field strain of calicivirus prior to the vaccination study.

of each tiger at time of vaccination with the first stage of the PCCH vaccination series, or time zero. Three to four weeks later, for the second and final stage of the PCCH vaccination series, tigers were vaccinated again with the calicivirus strain DD1 portion of the vaccine (Calicivax; Fort Dodge Animal Health; 1 ml i.m.). This booster vaccination was given through various methods of remote drug delivery, pole-syringe, or hand-injection. Serum was collected from three tigers throughout the study through operant conditioning, where blood was collected from the lateral or ventral tail vein through the enclosure fencing. For these three tigers, serum was collected from the lateral or ventral tail vein at 1, 2, 3, 7, 9, and 12 mo after PCCH vaccination. Operant conditioning was not established for the other tigers, and sera were therefore collected within 12 mo from the initial vaccination date for each tiger during anesthesia given for routine physical examinations. Sera used in this study were kept frozen in either a  $-29^{\circ}\text{C}$  or  $-62^{\circ}\text{C}$  freezer. Sera were submitted for evaluation within a month following the end of the 12-mo collection time period. All samples were batch tested at the same time for antibody titers against feline calicivirus strain 255 (field strain), feline calicivirus strain DD1 (virulent systemic strain), feline herpesvirus 1, and feline panleukopenia virus. Serial twofold dilutions of heat-inactivated sera were mixed with equal volumes of viral suspensions and incubated at  $37^{\circ}\text{C}$  with 5%  $\text{CO}_2$  for 1 hr and then inoculated into cell suspensions of Crandell Reese feline kidney (CRFK) cells propagated in 96-well plates. The plates were incubated for 3–4 days in a humidified incubator with 5%  $\text{CO}_2$  at  $37^{\circ}\text{C}$ . The CRFK cells were examined microscopically for cytopathic effects characteristic of feline calicivirus or feline herpesvirus 1 infections. The CRFK

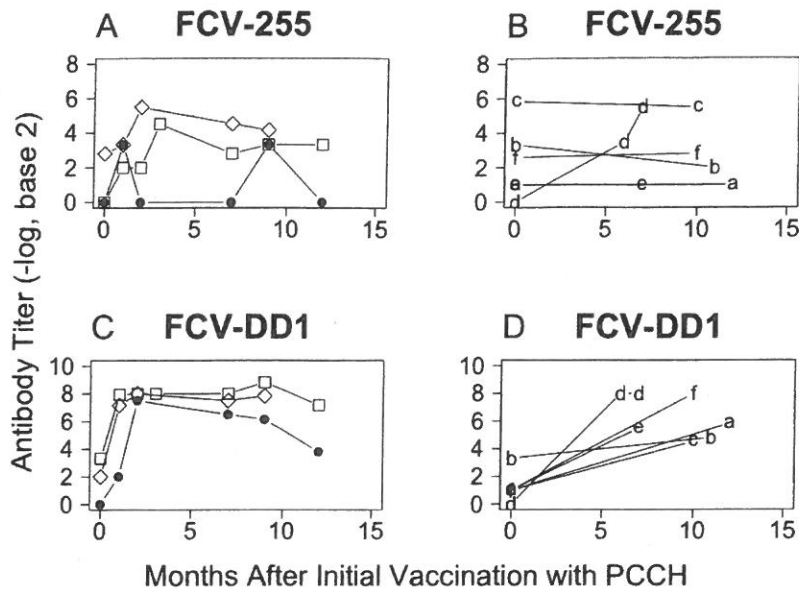
cells were examined for fluorescence for the presence of feline panleukopenia virus using an antigen-specific polyclonal antibody. The specific serum neutralization titer for each was defined as the serum dilution causing a 50% inhibition of virus replication. All tigers were monitored by their institutions' veterinary and animal husbandry staff for 12 mo for any evidence of negative reaction including swelling at the vaccine site, depression postvaccination, or any evidence of infection at vaccine site.

PCH and PCCH antibody titers were log transformed ( $-\log_2$ ). The paired *t*-test and one-sample *t*-test were used to evaluate and compare differences in PCH and PCCH antibody titers for changes within each tiger. Statistical tests were two-tailed and significance was determined at  $P < 0.05$ . Statistical analyses were performed with R (version 2.12.1, The R Foundation for Statistical Computing, <http://www.R-project.org>).<sup>13</sup>

## RESULTS

The nine tigers in this study were: Amur (*Panthera tigris altaica*) ( $n = 7$ ), Bengal (*Panthera tigris tigris*) ( $n = 1$ ), and Malayan (*Panthera tigris jacksoni*) ( $n = 1$ ). Three of these tigers were male. The tigers ranged in age from 1 to 19 yr with a mean of 5.8 yr and a median of 2 yr (Table 1). Three of these tigers were naturally infected with a field strain of calicivirus at birth, 2 yr prior to the onset of this study (Table 1). Saliva collected from these three tigers, once clinical signs had resolved, were negative for calicivirus using a polymerase chain reaction test.<sup>6</sup> After resolution of infection, these animals were vaccinated with the PCH vaccine. Banked sera from these animals were used to determine antibody titers elicited by the PCH vaccine. There was no known prior calicivirus infection for the other tigers.

There were not any reports of adverse reactions or problems with either the PCH or PCCH vaccines. The tigers had both pre-PCCH-vaccination and post-PCCH-vaccination titers measured, where prevaccination titers were typically measured on the day of PCCH vaccination (although some of the tigers that did not require anesthesia had titers measured up to a week before PCCH vaccination). Postvaccination titers were those occurring 2 mo or more after the PCCH booster vaccination. The number of samples collected after this booster vaccination ranged from 1 to 5. Pre-PCCH-vaccination titers for FCV-255 and FCV-DD1 are shown (Fig. 1) for these tigers in relationship to the titers taken in the 12 mo postvaccination for each of these tigers.



**Figure 1.** Pre- and postvaccination geometric ( $-\log_2$ ) antibody titers for tigers against the combination vaccine (PCCH): **A, B.** feline calicivirus strain 255 (FCV-255) and **C, D.** feline calicivirus strain DD1 (FCV-DD1). Prevaccination titers are shown at month zero and are for measures within a week before PCCH vaccination. **A** and **C:** titers for three juvenile tigers with frequent sampling; symbols: unfilled square, unfilled diamond, and filled circle are for each individual Amur tiger sibling at the same zoo, two females and one male, respectively. **B** and **D:** titers for six other tigers; lowercase lettering is for tiger identifications as follows: a = tiger 6; b = 10; c = 11; d = 14; e = 17; f = 18.

Three tigers with natural exposure to calicivirus were excluded from a pairwise statistical comparison (Fig. 1A, C). Pre- and post-PCCH-vaccination ranges and fold change responses are shown for the remaining six tigers with 95% confidence interval (CI) (Table 2, Fig. 1B, D). The only significant change in titer was for FCV-DD1 (paired *t*-test,  $P < 0.01$ ). There was not a significant change for comparisons of post-PCCH-vaccination titers 2–6 mo versus >6–12 mo.

Three juvenile tigers from this study had natural exposure to calicivirus and had higher reciprocal titers to FCV-DD1 prior to vaccination with FCV-DD1 compared to the juvenile tiger

who, although having a  $>0$  titer, did not have natural exposure to calicivirus (Table 3). The initial pre-PCH titer for the juvenile tiger without known exposure to calicivirus was measured more than 2 mo after birth. The three juvenile sibling tigers were from the same institution, two females and a male, and had natural exposure to calicivirus 5 days after birth. They received a series of three PCH vaccinations within their first 6 mo and titer measurements began at that time. After 23 mo of age, each of these three tigers received PCCH vaccination. These three sibling tigers had a lower reciprocal titer to FCV-DD1 immediately prior to PCCH vaccination than afterwards (Fig. 1A, C). For this set of three tigers, similar results

**Table 2.** Pre- and postvaccination titers and fold increase for PCCH vaccine following PCH vaccination for six tigers.<sup>a,b</sup>

Viral strain	Antibody titer		Fold increase
	Pre-PCCH	Post-PCCH	
Calicivirus 255	2.5 (0.44–4.5)	2.7 (0.85–4.7)	0.34 (–1.4–2.1)
Calicivirus DD1	1.4 (0.39–2.4)	6.1 (4.5–7.7)	4.7 (2.5–6.9)*
Feline herpesvirus 1	2.5 (0.94–4.0)	2.4 (1.7–3.4)	–0.13 (–1.6–1.34)
Feline panleukopenia	8.4 (7.4–9.4)	8.0 (no variation)	–0.39 (–1.4–0.61)

<sup>a</sup> Geometric mean,  $-\log_2$  (95% confidence interval).

<sup>b</sup> These tigers did not have any known, natural exposure to calicivirus throughout the study.

\* Asterisk indicates significance of change in titer of serum neutralization for each viral strain ( $P < 0.05$ ).

**Table 3.** Antibody titers for juvenile tigers based on vaccination status and incidental exposure.<sup>a</sup>

Viral strain	Vaccination status <sup>b</sup>	Tiger no. 1 <sup>c</sup>	Tiger no. 2 <sup>c</sup>	Tiger no. 12 <sup>c</sup>	Tiger no. 14
Calicivirus 255	pre-PCH	NR	NR	NR	1.0
Calicivirus 255	post-PCH, pre-PCCH	1.0	3.1	1.3	1.0
Calicivirus 255	post-PCCH	3.3	4.5	1.0	4.5
Calicivirus DD1	pre-PCH	NR	NR	NR	1.0
Calicivirus DD1	post-PCH, pre-PCCH	3.3	3.3	1.8	1.0
Calicivirus DD1	post-PCCH	8.0	7.8	6.3	8.0
Feline herpesvirus 1	pre-PCH	NR	NR	NR	1.0
Feline herpesvirus 1	post-PCH, pre-PCCH	3.5	4.8	1.6	1.0
Feline herpesvirus 1	post-PCCH	5.5	5.2	3.0	1.8
Feline panleukopenia	pre-PCH	NR	NR	NR	8.0
Feline panleukopenia	post-PCH, pre-PCCH	8.0	8.8	8.0	8.0
Feline panleukopenia	post-PCCH	8.0	8.8	10	8.0

<sup>a</sup> Geometric median,  $-\log_2$ . NR = no reported value.

<sup>b</sup> Pre-PCCH is <1 wk before PCCH administration; post-PCCH is 2 mo after the start of the PCCH vaccinations.

<sup>c</sup> Indicates natural exposure to field strain of calicivirus prior to vaccination study.

were found for PCCH where, the week prior to PCCH vaccination, reciprocal titers were significantly less than postvaccination reciprocal titers in the following 12 mo (one sample *t*-test,  $P < 0.001$ ).

## DISCUSSION

The PCCH combination vaccine with an additional killed calicivirus strain (FCV-DD1) led to a humoral response against FCV-DD1 and did not produce any adverse vaccine reactions. It remains necessary, however, to evaluate the humoral response and how it correlates to protection in these tigers.<sup>11</sup> Experimental challenge studies on calicivirus conducted in domestic cats with the PCCH combination vaccine resulted in protective titer thresholds ranging from  $>8$  to  $>16$  ( $\log_2$ ,  $>3$  to  $>4$ ), and nonprotective thresholds were  $<2$ .<sup>7,10,12</sup> The response to the PCCH combination vaccine in this study rose to the protective thresholds found in domestic cats, but protection may not yet be assumed for nondomestic felids based on differences such as body size, physiology, genetics, and environment. In these nondomestic endangered species, a controlled study of protective effect is not possible. Monitoring of titers and vaccination status for naturally infected or exposed animals is the only realistic option for gauging the actual level of vaccine protection. In addition to prevention of infection as a protective effect, other aspects of protection may be to decrease clinical signs as well as the potential for death.<sup>14</sup>

The duration of disease protection is another essential aspect of a vaccination protocol. Studies

in domestic cats suggest that protection from modified live vaccines may last for several years.<sup>3,5,18</sup> Killed virus vaccines are expected to have a shorter period of protection.<sup>3</sup> In this study a killed-virus vaccine was used, and there appeared to be some decline within a year for titers measured for FCV-255 and FCV-DD1. Killed-virus vaccines are commonly used in endangered species so they will not produce disease in these endangered animals, as has been found in some domestic dogs and exotic animals vaccinated with modified live-virus vaccines.<sup>1,2,4,9,19</sup> The vaccine in this study did not appear to lead to adverse side effects. Some institutions have recently used modified-live virus vaccines, although a significant increase in calicivirus antibody titer was not found.<sup>17</sup> In this modified live-virus vaccination study, one animal had an abortion and there were other animals observed to have diarrhea, pyrexia, and vomiting or melena (or both).<sup>17</sup> For protocols using killed-virus vaccines, a conservative recommendation for vaccine scheduling would be for revaccination to occur within an annual time frame of vaccination. This could be adjusted, however, with respect to risk of calicivirus exposure, maternal immunity, loss of humoral response as measured on an annual or biannual basis, and additional findings from future, more expansive cross-institutional data sets.

There is an increased need for adequate monitoring to obtain additional data and titers before and after natural infection against emerging novel strains of calicivirus or prior to and after vaccination. An ideal source of tigers for monitoring of serologic status and natural exposure would be seronegative juveniles that have lost maternal

antibodies, as was the case for a subset of four tigers in this study. This current research is pursuing exact identifications of calicivirus strains occurring within domestic stray and non-domestic felids and the direct use of the PCCH vaccine without a previously administered PCH vaccine.

## CONCLUSIONS

The use of a standard killed-virus combination vaccine (PCH) followed by an enhanced killed-virus combination vaccine (PCCH) resulted in higher reciprocal titers against calicivirus strain FCV-DD1 postvaccination. PCCH vaccination did not appear to lead to adverse side effects, as appears to have occurred in the recently published study using modified live vaccines in exotic felids.<sup>17</sup> Use of this enhanced vaccine within an annual time frame to maintain humoral antibody titers may therefore be a reasonable strategy. Further observational studies remain necessary to more precisely optimize vaccine scheduling and evaluate efficacy. It is especially important that institutions continue to develop operant conditioning with their tigers to attain a more reliable method for sampling humoral antibody titers and that measures of titers be evaluated and reported for future natural exposures and outcomes of morbidity and mortality.

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From: Fountain, Pat  
Sent: Wednesday, April 02, 2014 10:09 PM  
To: Graham, Sherrie  
Subject: AZA Conference

I just wanted to take a minute and thank you again for the opportunity to go to the AZA mid-year conference. I know it all came together at the last minute but I am extremely grateful for the knowledge I acquired. Not to mention the time I was able to spend talking and exchanging ideas with you.

I learned a lot through the ungulate TAG group. Everything ranging from the different recommendations of species for zoos to exhibit, training techniques for moose, and even some current foot issues they are having in giraffes that we may be able to apply to our camels and rhinos. The most applicable thing I learned was how to set up a body scoring index for our hoofstock at the zoo, which will help us determine the health of our animals through observation. That one is going to take some work. Hopefully with some intern man hours put into it too. In the Green summit I attended I learned some valuable ways, more importantly some inexpensive ways, we can better manage our waste. The most interesting being how to possibly turn our animal waste into compost, either at our facility or by sending it to a commercial compost farm. I also had the opportunity to go to a hornbill workshop and learn different training techniques and valuable breeding information if we ever have the opportunity to do so. Those are just the things I remember off the top of my head. There are many more things I wrote down but I left my notes at work to share with everyone there.

I just wanted to say thank you again. Going to this conference and having the experience I had makes me excited for whenever the next opportunity arrives. I feel more informed and confident in my job and actually more empowered at work. I think that everyone should take the chance to expand their knowledge and zoo network by attending a conference of their choice. I hope that you enjoyed the conference as much as I did and if you ever need another date to a conference I will be ready. Apparently all I need is about two days notice...

Thank you,

Pat