### CVM eNews - April 2019

Cornell College of Veterinary Medicine <cornellvet@cornell.edu>
Fri 4/19/2019 2:00 PM

To: Susanne K. Whitaker <skw2@cornell.edu>





# **April 2019**



# Message from the Dean and invitation to April 22 Town Hall meeting

The last month has been a busy and exciting time for the College of Veterinary Medicine. We celebrated our history with our quasquicentennial as well as our future with the <u>announcement of the Center for Veterinary Business and Entrepreneurship</u>.

This unique center will unite expertise from faculty from across Cornell, businesses, entrepreneurs and alumni to offer a wide-variety of classes and enrichment opportunities

for D.V.M. and graduate students, as well as veterinary medical professionals. The center will help position graduates for success in an array of careers, facilitate the transition of biomedical discoveries to commercial products, harness the power of economics to strengthen animal health businesses and organizations, and provide a platform for veterinary academia to participate in critical conversations about the future of veterinary animal health.

Finally, I would like to remind you about the **CVM Town Hall on Monday, April 22 from noon to 1**. Please join me for a brief update on our strategic plan progress and a dialogue about how we can improve two-way communication – both within the college and externally. During the strategic planning process, one of the topics discussed most frequently was a desire by the college community members to have better ways to know what is happening in other parts of the college. We also discussed the need to increase the connections with our important external stakeholders ranging from prospective students to referring veterinarians. At a time when we have an overwhelming number of messages vying for our attention, we want to discuss – as a college – ways to make our communication as effective as possible.

I hope many of you can join us to kick off this important discussion.

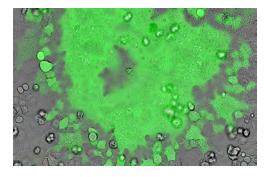
Sincerely,

Lorin D. Warnick, D.V.M., Ph.D. '94 Austin O. Hooey Dean of Veterinary Medicine

#### **Latest News**



Center for Veterinary
Business and
Entrepreneurship
launches



New method drives cellular HIV reservoirs to self-destruct



<u>College launches new</u> <u>program to support early-</u>



# career faculty and boost diversity

# **April Trivia**

Look out for the answer to this month's trivia question in May	/'s eNews!
Fill in the blank: In 1908, CVM created the first	_ in the United States.
farrier course	Select
companion animal hospital	Select
ambulatory clinic	Select

March's trivia question: In what year was the Society of Phi Zeta founded at Cornell?

Answer: 1925, and 81 percent of you got the answer correct! Other schools joined the society, and in 1929 it became the national honor society for veterinary medicine, recognizing top students in third- and fourth-year classes. There is a chapter at every veterinary school in the United States, with Cornell as the Alpha Chapter.

# **Community Notes**

Many Voices, One College
A monthly diversity and inclusion dialogue series
This month's topic: Our Students... Their Stories

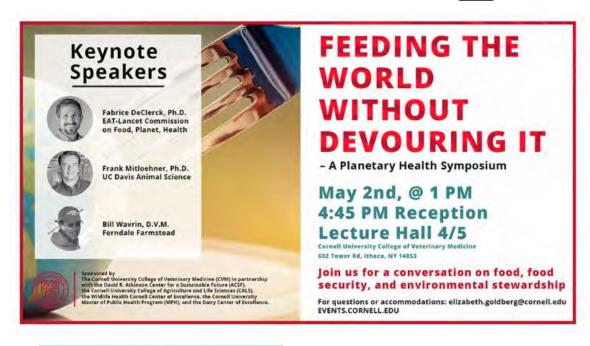
Rebecca Turcios
DVM Student '21

Karla Garcia-Martinez
PhD Student - BBS

Rebecca Turcios
MPH Student '20

Monday, April 29 Noon to 1:00 Green room (S2-223) adjacent to the Café

Food will be provided







Join the dialogue at the **CVM Town Hall**!

Monday, 4/22 from 12-1 p.m. in Lecture Hall 4/5

The topic is **two-way communication**.

Bring your reusable eating and drinking materials for the light refreshments provided.

Congratulations to the student team, who won 11-8 in the students vs. faculty and staff hockey game!

The **CVM Wellbeing Fair** is next week! On April 25 from 11 a.m. - 1 p.m. in the CVM Center Atrium, Human Resources and the Wellbeing Office are hosting this event that will focus on the work/life benefits offered to faculty and staff. There will be a

variety of tables and workshops for the community to enjoy as well as a chance to win some prizes.

**Spring Into Your Step Challenge**: Brought to you by the CVM Staff Council, the challenge runs from 4/15-5/10. Join a walking team and count your steps for prizes! Register here.

Hellos, goodbyes and HR update

#### **CVM** in the News



Today: How to remove a tick

Laura Goodman, Ph.D. '07, advises on tick safety year-round.



WGRZ: Canine cancer research at **Cornell University** 

A profile on the excellent canine cancer research happening at the college.

**More News** 

**More Events** 

#### **Have Ideas to Share?**

Let us know what you want to see in the Community Notes portion of eNews. Contribute events and articles which might be of interest to your colleagues and the CVM community at large.

Send in your submission by 5/17/19 to cornellvet@cornell.edu. Make sure to put eNews in the subject line so that your item can be considered for the next issue.











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CVM > News >

## Center for Veterinary Business and Entrepreneurship launches

路 Thursday, April 4, 2019 - 10:20am

What does cash flow and commercialization have to do with caring for cats or cows? Cornell University College of Veterinary Medicine (CVM) believes the answer is, quite simply, everything.

This April, CVM launched the Center for Veterinary Business and Entrepreneurship (CVBE), a new inter-disciplinary program intended to spur research, training and outreach in veterinary business to improve animal healthcare.

Businesses are the vehicle for delivering veterinary medical services and developing new life-saving products. Yet, veterinary academia has largely ignored the business of veterinary medicine as a focus of research and scholarship. The college is taking a new approach with this unique program that unites expertise from the Cornell College of Veterinary Medicine and the Cornell SC Johnson College of Business.

"I'm thrilled to announce the launch of the Center for Veterinary Business & Entrepreneurship in collaboration with the Cornell SC Johnson College of Business," says Lorin D. Warnick, D.V.M., Ph.D. '94, the Austin O. Hooey Dean of Veterinary Medicine. "The center is the culmination of extensive needs-based assessments and



Dr. Kevin Hallock (left), dean of the SC Johnson College of Business; Jodi Korich, D.V.M. '97, associate dean for education; and Lorin D. Warnick, D.V.M., Ph.D. '94, the Austin O. Hooey Dean of Veterinary Medicine. Photos by Rachel Philipson.

planning, and will answer the urgent need in the veterinary profession to provide essential training for students, faculty and alumni to launch, manage and succeed in a business or organization of any kind."

"We are very pleased to support this new venture with the veterinary college," says Dr. Kevin F. Hallock, dean of the SC Johnson College of Business. "It's an excellent opportunity to create an interdisciplinary collaboration between our institutions, and to help veterinarians strengthen their businesses and explore entrepreneurism more fully."

The CVBE focuses on four programmatic pillars: education, economics research, entrepreneurship and intrapreneurship. Through its educational program development efforts, the center will offer a variety of educational programs, including a new D.V.M. certificate program, as well as post-graduate executive education. The center will establish a veterinary economics research program through a strategic faculty hire and collaborations with Cornell's Charles H. Dyson School of Applied Economics and Management. Its entrepreneurship program will focus on creating a robust pipeline from scientific discoveries to commercialization, and intrapreneurship activities will focus on creating an environment that incentivizes and supports innovation and improvement.

#### Crafting curriculum

To lay a solid foundation for the design of the new business management curriculum, the college conducted a needs-based assessment, surveying and interviewing a diverse group of veterinarians. Additionally, an expert working group of animal health industry leaders, corporate practice managers, private practice owners and veterinary faculty was assembled to identify the knowledge, skills and attributes necessary to support business success. Once implemented, all students will be expected to demonstrate mastery of the core competencies, while elective courses will offer students an opportunity to acquire higher-level competencies tailored to their career interests. Students who complete an eight-credit business pathway will receive a certificate in veterinary business management.

"Our uniquely integrated curriculum will embed the principles of well-run businesses and organizations into students' medical and surgical training," says Jodi Korich, D.V.M. '97, associate dean for education. "We're using a lot of case-based exercises and on- and off-campus learning experiences at hospitals and companies to provide students with living laboratories in which to observe the



Lorin D. Warnick, D.V.M., Ph.D. '94, the Austin O. Hooey Dean of Veterinary Medicine

business principles in action. We are working to develop an extensive network of practices and companies with whom to partner on this endeavor."

### Vital training

An active search for two new faculty to lead the CVBE programming is now underway. One faculty member will spearhead the veterinary business and management curriculum, developing a team-taught program spanning the four-year curriculum that will provide a solid foundation in business management. The second hire will be a tenure-track position in veterinary economics with a joint appointment at Dyson. This new hire will investigate economic strategy and contribute to evidence-based recommendations to improve veterinary healthcare delivery.

While this search continues, part of this new curriculum is already in motion. Two business courses currently available to veterinary students include Veterinary Practice Management, taught by Dr. Robert Karpman, professor of practice at the Charles H. Dyson School of Applied Economics and Management; and Agile Innovation, taught by Dr. Wesley Sine, faculty at Samuel Curtis Johnson Graduate School of Management. Agile Innovation is a uniquely experiential course that integrates with the Cornell Animal Health Hackathon and teaches students creative problem-solving skills that can be applied to animal health challenges.

Sine explains that learning to adapt and innovate is vital for veterinarians looking to own, grow and contribute to any practice. Basic business knowledge is also essential. "Someone can be the best veterinarian in the world, but if they're running a clinic and don't understand cash flow analysis or basic finances and marketing, that could destroy their business," says Sine.

Karpman, who worked as an orthopedic surgeon and chief operating officer of a hospital before shifting to teaching business management to students in the life sciences, noted also that these problems exist in both human and animal medical training programs. "This is a problem in a lot of professional schools," he says. "You learn the science side, you learn how to treat patients and diagnose their problems, but you don't know how to manage a business." Rather than

learning through trial and error, the new center will help veterinarians build and contribute to effective practices right out of the starting gate, Karpman adds.

Beyond benefiting individual veterinarians and practices, this kind of training has a collective benefit.

"Many major companies are trying to do good things in the world. They need leaders who understand the science behind doing that," Sine explains. "Veterinary business education at Cornell will send out a cadre of great veterinarians who know how to lead people, innovate and manage teams in a way that enables them to address these relevant problems in the world."

CVM alumni association executive board member Jorge L. Colón '92, D.V.M. '95, believes the benefits of the new center can go even further. As the owner of an equine veterinary practice in Lexington, Kentucky, Colón

"Someone can be the best veterinarian in the world, but if they're running a clinic and don't understand cash flow analysis or basic finances and marketing, that could destroy their business."

- Dr. Wesley Sine

has seen firsthand the values of business knowledge. "Shifting one's mentality from being a veterinarian, to being in the business of providing veterinary medical care — it just changes everything," says Colón. "The possibilities of this center are endless. It could be central in minimizing all the negative effects of financial instability, such as depression or poor work-life balance. If people can take better care of themselves, they can take better care of the people around them, and the society around them."

### Bringing scientific discovery to market

As the structure of coursework begins to crystallize, entrepreneurial training and scientific marketization is also taking shape. The CVBE will comprise a novel engine for improving the translation of science into commercialization.

Leveraging the entrepreneurial expertise of the SC Johnson College of Business, processes will be developed to help CVM researchers screen their innovations for potential commercialization much more efficiently. Ideas will subsequently be readied for presentation to potential investors or fed to incubators, such as Cornell's McGovern Center, for the next step of the start-up process.

The processes developed at the CVBE will enable CVM to expand its entrepreneurial portfolio, which already contains successes such as Embark, a dog DNA-testing founded by Dr. Adam Boyko in the Department of Biomedical Sciences, and the Cornell Collar, a commercial throat support device for race horses that minimizes airway obstructions developed by James Law Professor of Surgery Dr. Norm Ducharme. In fact, since 2003, CVM has licensed 470 inventions through the Cornell Center for Technology Licensing, and averaged 13 percent per year revenue growth in the past five years.

## **Bright futures**

The launch of the center signifies a new frontier for the college, and one that will define the institution long into the future.

"This is the way veterinary medicine is going," says Karpman. "I really congratulate the vet school. This is the first center of business and entrepreneurship established at any veterinary school in the United States, and they're taking the lead in this area."

"It's exciting to embark on an initiative of this scope."

- Jodi Korich, D.V.M. '97

"It's exciting to embark on an initiative of this scope," says Korich. "We are confident that this new center will position our graduates for success in a wide variety of careers, facilitate the transition of biomedical discoveries to commercial products that benefit more animals, harness the power of

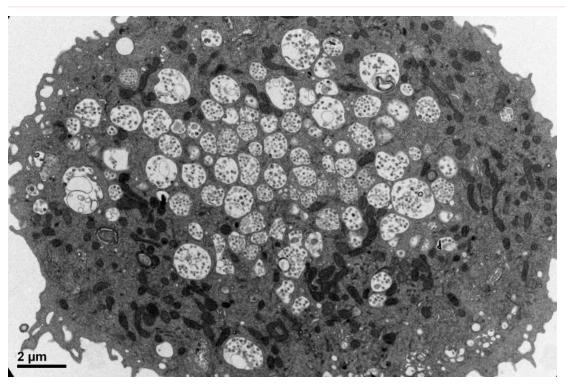
	economics to strengthen animal health businesses and organizations, and provide a platform for veterinary academia to participate in critical conversations about the future of veterinary animal health."		
Ву	Lauren Cahoon Roberts		
Cornell U	niversity College of Veterinary Medicine		Careers
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CVM > News >

#### New method drives cellular HIV reservoirs to self-destruct

Monday, March 25, 2019 - 2:55pm



An electron micrograph of experimentally infected HIV infected human macrophage with internal viral budding and collection of infectious virions (Photo credit: Shannon Caldwell).

The human immunodeficiency virus (HIV) is no longer a death sentence, yet a cure remains elusive. While current therapies can successfully manage active infection, the virus can survive in tissue reservoirs – including macrophage cells, which play an important role in the immune system.

Dr. David Russell, the William Kaplan Professor of Infection Biology in the College of Veterinary Medicine, and his research team in the Department of Microbiology and Immunology have pinpointed a novel angle of attack that could eradicate these viral reservoir cells – while leaving healthy cells untouched.

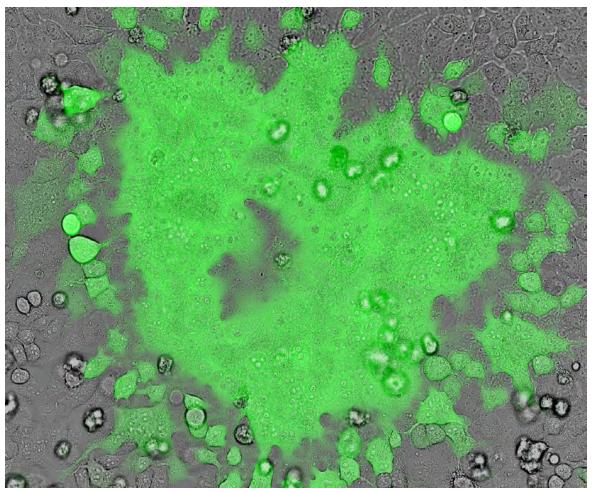
In their study, published March 27 in Proceedings of the National Academy of Sciences, Russell's team, led by first author and postdoctoral fellow Dr. Saikat Boliar, describe how a genetic regulator called SAF helps HIV-infected macrophages avoid cell death. After blocking SAF in HIV-infected cells, the researchers found that these reservoir cells then self-destructed.

"We were all surprised by the specificity of the cell death," Russell said. "Only infected cells die, while bystander cells, exposed to the same treatment at the same dose, showed no death at all."

While macrophages – immune cells that consume foreign entities in the body – are helpful in fighting off certain microbes, they provide the perfect foxhole for HIV. Some researchers believe these infected macrophages are the reservoirs for persistent HIV infection.

"Current HIV drugs work really well on active infection, but it is the tissue reservoirs that are the problem," Russell explained. "These sites of persistent virus are resistant to all current therapies."

Russell, Boliar and their colleagues wanted to investigate what cellular mechanisms were at play that helped keep infected macrophages alive, and the researchers turned their attention to long noncoding RNAs (lncRNAs) – genetic coding elements that turn genes up or down, but do not translate directly into proteins themselves.



HIV-infected human macrophages co-incubated with a reporter cell line that only expresses GFP when it is infected with HIV-1. This shows that that the HIV-infected macrophages can transmit infection to susceptible bystander cells and a therefore a source of active infection. (Photo credit: David Gludish)

"We were interested in long-noncoding RNAs because they are known 'master regulators' of cell pathways, and had not really been looked at systematically in HIV infection," Russell said.

The team screened a panel of 90 well-characterized lncRNAs in three distinct populations of human macrophages: healthy cells, HIV-infected cells and "bystander" cells – those that had been exposed to HIV but not infected.

The investigators found that an lncRNA called SAF was more prevalent in the HIV-infected macrophages. Previous studies found SAF prevented self-destruction in cells. Russell and his team suspected SAF was protecting HIV-infected macrophages from dying.

To prove this theory, the team blocked SAF's action using another noncoding RNA called small interfering RNA (siRNA), which effectively degrades targeted RNAs such as SAF. The researchers silenced SAF in the healthy, infected and bystander macrophage populations; the HIV-infected cells suddenly self-destructed, while the healthy and bystander cells remained unscathed.

"This showed us that when cells are infected with HIV, the virus alters the long noncoding RNAs' expression in that cell," Russell said. This would explain why bystander cells that are exposed to the HIV virions, but not actually infected by them, do not have the same response.

This discovery taps into a novel angle in curing HIV: selectively destroying persistently infected cells. The Russell team is eager to exploit it for potential therapies.

"We plan to do a drug screen for compounds that drive HIV-infected cells into programmed cell death," Russell said. The team will start by looking for SAF inhibitors but also will look for other molecules that effectively eradicate reservoir cells through other mechanisms.

-By Lauren Cahoon Roberts

This story also appears in the Cornell Chronicle

Cornell University College of Veterinary Medicine

Careers

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CVM > News >

# College launches new program to support early-career faculty and boost diversity

Monday, April 8, 2019 - 4:01pm



Lorin D. Warnick, D.V.M., Ph.D. '94, the Austin O. Hooey Dean of Veterinary Medicine, speaking to attendees at the PACE program launch. All photos by Rachel Philipson/Cornell College of Veterinary Medicine.

A new Cornell program helps early-career faculty navigate the constellation of challenges they face by cultivating key professional skills.

The Program for Achieving Career Excellence (PACE) will offer targeted professionalization opportunities and work to increase diversity in departments that conduct research in the fields of human allergy and infectious disease. Directors celebrated the launch of the program with an event March 27 at the College of Veterinary Medicine.

"Early-career faculty are an underserved population," said Cynthia Leifer, Ph.D. '00, associate professor of immunology. "Cornell has successfully implemented similar programs to increase the diversity of students and representation of women, and now PACE will meet the needs of early academic professionals, especially URM faculty."

Leifer co-directs PACE with associate professor Dr. Hector Aguilar-Carreno. The program's advisory board, participants and faculty mentors come from colleges across Cornell, including the College of Veterinary Medicine, the College of Agriculture and Life Sciences and the College of Engineering.

To be eligible, applicants must be within the first eight years of their initial faculty appointment and have research interests that align with the NIH-National Institute of Allergy and Infectious Diseases, which funds the program. PACE accepted its first round



Cynthia Leifer, Ph.D. '00, addresses the attendees. Leifer co-directs PACE with Dr. Hector Aguilar-Carreno.

of 42 participants this semester, who will attend a grant writing course and professional development workshops, enjoy an individualized mentoring plan, and have access to a visiting scholar grant.

Leifer and Aguilar-Carreno developed the program's components by identifying crucial areas in the professional path of early-career faculty where individuals need the most support.

"All the aspects of our program have to do with our overarching goal of bringing early-career faculty to success," said Aguilar-Carreno.

A key arm of PACE focuses on increasing faculty diversity in the sciences — the Rising Star Program — bringing postdoctoral researchers from underrepresented minority (URM) groups to



Dr. Hector Aguilar-Carreno and other attendees at the PACE launch.

Cornell with the aim of recruiting them to eventual faculty positions. "This program will have ripple effects far beyond its initial objectives," said Lorin D. Warnick, D.V.M., Ph.D. '94, the Austin O. Hooey Dean of Veterinary Medicine. Warnick noted that PACE is one way the college is working toward the diversity and inclusion goals outlined in its 2018-2022 Strategic Plan.

Currently, over 30 percent of American citizens identify as URMs, and that number is expected to rise to 40 percent by the year 2050. A 2018 study in Plos ONE found that, of students earning a bachelor's degree in biological sciences, 60 percent are white while 18 percent are URM. Consequently, academic science departments may struggle to reflect a representative number of URMs in their faculty ranks.

"Overall, PACE will directly increase diversity of the biomedical research workforce at Cornell," said Leifer, "in addition to creating a group of successful URM faculty who can inspire and train the next generation of increasingly diverse undergraduate and graduate students."



Leifer and Aguilar-Carreno developed the program's components by identifying crucial areas in the professional path of early-career faculty where individuals need the most support.

By Melanie Greaver Cordova



CVM >

## April 2019: Hellos, goodbyes and HR update

Help us welcome new employees who joined the CVM community in March and bid a fond farewell to those who have retired.

#### **New Hires**

- Roxanne Hedler Coffey, Licensed Veterinary Technician Anesthesia, Cornell University Hospital for Animals
- Deborah Diehl, AHDC Diagnostic Assistant Endocrinology, Animal Health Diagnostic Center
- Diane Lynn Herman, AHDC Diagnostic Tech Molecular Diagnostics, Animal Health Diagnostic Center
- . Katharine Jeannette Lee, Client Service Representative, Cornell University Hospital for Animals
- Aidan Papalia, Health Information Management Analyst, Cornell University Hospital for Animals
- Jamie Weber, Administrative Assistant IV, Baker Institute for Animal Health

#### Retirements

There were no retirements during this time period

#### **Human Resources Update**

#### Required NY State and NYC Harassment Prevention Training

Cornell is committed to providing and maintaining a safe and inclusive environment for all students, faculty and staff. We make this commitment because it is an essential part of creating a successful and equitable living, learning and working environment. Each member of our community benefits when our classrooms and workplaces are respectful and when the atmosphere is collegial and welcoming.

New York state and New York City require employers to provide annual training to their employees on how to address sexual harassment in the workplace. Cornell's training is available on our internal learning management system, CULearn, and is entitled "Maintaining a Harassment Free Environment." We are asking all of our employees to participate in this important training by October 9, 2019.

Cornell has many resources for employees on this topic. These resources include our program for all new employees, "Respect@Cornell: Addressing Sexual Assault and Sexual Harassment" (available to all employees on CULearn). The Title IX website and the SHARE website also provide additional information and resources for our employees.

Thank you for your engagement and attention on this very important issue. If you have any questions, contact any of the resources listed below. Please don't leave your questions on this essential topic unanswered.

#### **Resources and Information**

Title IX Office: 255- 2242

Workforce Policy and Labor Relations: 255-6866

HR Representative: https://hr.cornell.edu/find-your-hr-representative

Faculty and Staff Assistance Program: 255-2673 Cornell University Police Department: 255-1111

More support information can be found at http://share.cornell.edu/

University Policy Policy 6.4, "Prohibited Bias, Discrimination, Harassment, and Sexual and Related Misconduct," https://www.dfa.cornell.edu/policy/policies/prohibited-bias-discrimination-harassment-sexual-misconduct

#### Jennie T. Farley Office Professionals Day

#### **About the Event**

For one day each year the Cornell community honors its office professionals by recognizing both the important role they play on campus and the changing nature of their profession. The Jennie T. Farley Office Professionals Celebration, named for its co-founder and a late faculty member of ILR, draws more than 750 office professionals from across campus; it is now one of the largest workplace observances at Cornell.

This year's keynote speaker will be Bill Harrison, Class of 1976.

Register Today @ https://www.ilr.cornell.edu/office-professionals-day

**Date:** Wednesday, April 24, 2019 **Time:** 11:30 am - 1:00 pm **Location:** Barton Hall

#### CVM Wellbeing Fair

#### About the Event

On April 25, Human Resources and the Wellbeing Office will host a CVM Wellbeing Fair that will focus on the work/life benefits offered to faculty and staff. There will be a variety of tables and workshops for the community to enjoy as well as a chance to win some prizes. Stop by the Atrium from 11 a.m. - 1 p.m. to make some trail mix and mingle with your community members!

#### Current Nonacademic Open Positions

The list below is dynamic and updated regularly. For additional information, please visit the Cornell Careers Page at https://hr.cornell.edu/jobs.

- Director of Finance and Enterprise Performance- Cornell University Hospital for Animals
- Assistant Director & HR Business Partner- CVM Office of Human Resources
- Technician III (Cummings Lab)- Biomedical Sciences
- Diagnostic Technologist- Animal Health Diagnostic Center
- Teaching Support Specialist- CVM MPH & International Programs
- Dairy Field Technician, Animal Health Diagnostic Center
- Laboratory Operations Assistant II, Animal Health Diagnostic Center
- Licensed Veterinary Technician- CUHA, Companion Animal Nursing Care
- Program/Extension Aide II, Animal Health Diagnostic Center

#### Academic Open Positions

For a listing of open academic positions, please visit: https://apps.hr.cornell.edu/recruiting/facultycareer.cfm.

For information on the topics above, please contact the CVM Office of Human Resources at 607-253-4111.

Cornell University College of Veterinary Medicine

Careers



**HEALTH & WELLNESS** 

# How to remove a tick

Tick season is fast approaching.

March 26, 2019, 3:18 PM EDT / Source: TODAY

#### By Linda Carroll

Remember when your mother told you to remove a tick by covering it with nail polish? Well, it's one of those rare occasions when mom was wrong. When it comes to ticks, experts say no to nail polish, oils and matches.

While it may seem early to be talking about tick removal, scientists have shown that many <u>survive winter</u> just fine under a cover of fallen leaves, popping out on warmer days to crawl onto any mammal passing by. Here's some advice in case a tick crawls onto you.

## How to remove a tick

The right way to remove a tick is with tweezers grasping the nasty little bloodsucker as close to your skin as possible, said Dr. Laura Goodman, an assistant research professor at the Cornell College of Veterinary Medicine in Ithaca, New York. "And you want to do it in one smooth motion," she advised. "You don't want to try to twist it around or add any substance. The key is to get it out as cleanly as possible."





#### 5-year-old girl was temporarily paralyzed by a tick bite, her mom warns

JUNE 13, 201802:02

There are a couple of reasons for grabbing a tick close to your skin. First, Goodman noted, is that you will be able to get the tick's head and mouth. Use fine-tipped tweezers to help you get as close to the skin's surface as possible.

After you remove the tick, clean the bite area and your hands with rubbing alcohol or soap and water, the Centers for Disease Control and Prevention suggests.

"If you want to have the tick identified, having the complete body including the head is important," she explained. "There are multiple different types of ticks out there and they all look very much the same to the naked eye. Unless you get them under the microscope and are able to look at the mouth parts they are sometimes impossible to distinguish from one another."

It's important to make sure you get the head out because it could cause a local skin infection if you leave it behind, Goodman warned.

Another important rule: You also need to be very careful not to squeeze the tick's body, Goodman said. That's because, if the tick is carrying a disease, you would be pushing more of the pathogens into your body.

# How to dispose of a tick

Once you've removed the tick, you can dispose of it by putting it in alcohol, placing it in a sealed bag, wrapping it tightly in tape or flushing it down the toilet. If you want to bring it to a doctor, the sealed bag may be your best option.

Knowing what kind of tick you've been bitten by may give you clues to what kinds of diseases you could have been exposed to, such as <u>Lyme</u>, <u>Rocky Mountain spotted fever</u> and <u>Powassan</u>. "If you know which one it is, you'll know which pathogens that tick is capable of transmitting."

That doesn't mean you should wait for tests on the tick to come back before seeing a doctor, Goodman said. "You may develop symptoms before the test results come back," she explained, adding that symptoms need to be discussed with your doctor.

# Tick bite prevention

Goodman recommended that everyone who goes hiking carry a tick kit – which should include tweezers – with them. "Along with the removal device, you also want to bring alcohol wipes to clean up the spot where the tick was attached," Goodman says.

Another item that should be in your tick kit is an empty prescription container, Goodman said. That way, you'll have a place to store the tick until you get back home where you can submerge it in alcohol or put it in the freezer (while still in the container) which will kill it. That way you'll still have your specimen to send to a lab to be identified.

The same removal rules apply to pets, Goodman added.



Linda Carroll

Linda Carroll is a regular contributor to NBCNews.com and Today.com. She is also the co-author of *Out of the Clouds: The Unlikely Horseman* and *The Unwanted Colt who Conquered the Sport of Kings*.

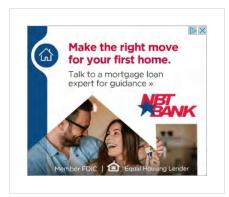


WATCH LIVE On Air 3:55PM 43° Buffalo, NY

#### **BREAKING NEWS**

FBI investigating Buffalo-area OTB







# 2 the Outdoors: Canine cancer research at Cornell University

The school's veterinary college is a leader in the field.

ITHACA, N.Y. — Cancer robs many lives, and the pain caused by that loss is no less devastating when t life is an animal.

 ${\it Cancer in dogs is quite common, and Cornell University is one the leaders in canine cancer research.}$ 

"We have our veterinary oncology department in the hospital, where we work to understand cancer in I dogs and cats, and then we have a variety of researchers on campus that work to understand the basic biology of how cancer develops," said Dr. Kelly Hume, Associate Professor/Veterinary Oncologist at Co



"Then we have a relationship with a medical campus in New York City in terms of how we can use what know and what we're studying about cancer in people to help dogs and back and forth as well."



Golden Retrievers are one of the breeds most susceptible to cancer.

Terry Belke

The increased attention to canine cancer may reflect their growing importance in our daily lives. Sixty- $\epsilon$  percent of American households live with a pet, and that includes almost ninety million dogs.

"The role of pets in our lives and enriching our lives is definitely helping to sort of increase the support research on their diseases," Dr. Hume said. "But I think equally important is that we're sort of recognizin that because those animals live in the same environment as we do, that is also such an opportunity to I about things relative to us as well."

One of the most aggressive forms is Hemangiosarcoma. It's unique to dogs but can also be found in ca and it's particularly deadly. Often by the time it's diagnosed, it's too late to treat.

The Baker Institute at the university is dedicated to research in this field. Dr. Scott Coonrad is Professor the Baker Institute.

"There's not many people that research Hemangiosarcoma because, even though it's fairly common, it' as common as Lymphoma in dogs, for example," he said. "Fortunately it's not a very common disease ir humans, I think only a few hundred people get the analogous disease, so there's very little human rese in this area."

The Cornell research is crafting a hopeful future. They are close to isolating a biomarker in the blood the could reveal the disease in it's early stage.



"It would just be a molecule circulating in the blood that most likely is arising from the tumor, or is in response to the tumor," Coonrad said.

That discovery would bring much needed knowledge to families dealing with this devastating disease.

"The owners may decide to put the dog down because they think it's Hemangio, but it may not be," he "So if there was this really rapid sort of biomarker it would be a really big advantage for the clinicians al for the owners to get some peace of mind, at least knowing what their dog has."

For more information on Cornell's research, click here.

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