

SAY HELLO AND IN THE MOMENT WE'RE GOING TO MOVE THAT WINDOW AWAY AND IT WILL BE MODERATED. THAT'S THE WINDOW TO ASK QUESTIONS, MAKE COMMENTS AND MOST IMPORTANTLY AS IMPORTANT IF YOU HAVE TECHNICAL DIFFICULTY YOU CAN USE THAT WINDOW TO LET US KNOW.

>> THANK YOU, HOPE, I APPRECIATE YOUR HELP. MAKING WEBINAR SERIES POSSIBLE. WELCOME BACK EVERYONE TO CARING FOR YESTERDAY'S TREASURES-TODAY. OR SOUND QUALITY I HAVE A SCRATCHY VOICE TODAY THAT'S JUST ME.

BUT YOU CAN PUT A NOTE TO US THERE WE WILL REPLY TO YOU. I WILL SAY IF YOU'RE HEAR AN ECHO YOU MIGHT BE LOGGED IN TWICE IF WE'RE -- IF AUDIO IS COMING THROUGH SORT OF SPOTTY, YOU MIGHT WANT TO CLOSE EXTRA PROGRAMS THAT YOU HAVE OPENED ON YOUR COMPUTER.

AS I SAID WE'LL MAKE SURE TO LOOK FOR YOUR QUESTIONS THERE AND EITHER REPLY TO YOU PRIVATELY OR IF IT HAS TO DO WITH TODAY'S TOPIC WE'LL GO AHEAD AND PUBLISH THOSE TO THE GROUP.

AGAIN THIS IS OUR FIFTH CLASS IN OUR SERIES ON COLLECTIONS CARE BASICS.

TODAY WE'RE TALKING ABOUT MOLD. SO IF YOU THOUGHT PESTS WERE BAD IT'S ABOUT TO GET WORSE.

FULLY HELPFUL UNFORTUNATELY THIS IS ANOTHER COMMON PROBLEM AND I THINK THERE IS GREAT INFORMATION AND ADVICE FOR YOU TODAY.

THEN OUR FINAL CLASS IS NEXT WEDNESDAY AND REALLY HOPE YOU'LL TUNE IN BECAUSE IT'S GOING TO

HELP YOU SHARE WHAT YOU'VE BEEN LEARNING HERE WITH OTHERS ON YOUR STAFF.

YOUR STAFF AND VOLUNTEERS AND I THINK WILL HAVE LOT OF GREAT SORT OF FINAL WORDS FOR YOU AS WE WRAP UP THIS COURSE.

WE'VE BEEN HAVING REALLY GREAT INTEREST IN THESE COURSES AND WE HAVE ALMOST 300 PEOPLE AGAIN LOGGED IN TODAY.

A FEW PEOPLE HAVE ASKED IF WE WOULD BE WILLING TO SHARE A LIST OF PARTICIPANTS.

YOU'RE ABLE TO SORT OF SEE EACH OTHER IN THE X&K BOX AND HELLO BOX.

BUT WHEN YOU TO GO LIVE CONFERENCE YOU GET TO SEE -- LIST WHO HAVE IS PARTICIPATED IF YOU WANT TO CONTINUE NETWORKING AFTER THE CONFERENCE YOU CAN DO THAT.

SO SOME FOLKS HAVE SAID, COULD WE DO THE SAME HERE.

I WANTED TO ASK.

WE DIDN'T MAKE ANY STATEMENT WHEN WE ASKED TO YOU REGISTER. IT LOOKS LIKE IT'S SORT OF A MIX OF NO OPINION AND YES.

IT'S HARD TO SAY WHAT TO DO IN THIS CASE.

YOU CAN OPT OUT IF YOU LIKE. OR YOU CAN SEND US AN E-MAIL TO OPT OUT.

I'M GOING TO CLOSE THIS.

AGAIN, IF YOU HAVE -- I THINK WE'LL JUST HANDLE IT THAT WAY.

IT LOOKS LIKE THERE'S ENOUGH INTEREST BUT I THINK MIGHT BE WORTH US DOING THIS.

IF YOU DON'T WANT TO BE MENTIONED THIS IS HOW TO LET US KNOW.

JUST

INFO@HERITAGEPRESERVATION.ORG OR A MESSAGE.

YOU DON'T NEED TO TELL US IF YOU WANT FOB ON THE LIST WE'LL AUTOMATICALLY TAKE EVERYONE WHO IS REGISTERED AND PUT THEM ON THE LIST.

AGAIN OUR COLLECTIONS CARE BASICS HOME PAGE HAS GREAT RESOURCES ALL THE LINKS WE TALK ABOUT THAT EITHER ARE SPEAKERS HAVE SORT TO MENTION.

YOU CAN FIND THEM HERE.

YOU CAN FIND LINKS TO THE HOMEWORK ASSIGNMENTS.

AND POWER POINT SLIDES WILL BE UP HERE, TOO.

KEEP CHECKING BACK.

I'M CONSTANTLY UPDATING IT'S.

IT'S ALL THERE.

THEN AGAIN ONLINE COMMUNITY.

SO THIS IS ANOTHER GREAT WAY TO NETWORK.

IF YOU HAVE A QUESTION THAT COMES UP OR COMES TO YOU AFTER THE SESSIONS YOU WANT TO ASK YOUR COLLEAGUES, THAT'S GREAT. WE HAVE CONSERVATORS WHO ARE ACTIVE ON THE ONLINE COMMUNITY THEY ARE ALWAYS REALLY GOOD ABOUT WEIGHING IN.

SO THAT'S ANOTHER GREAT PLACE AND THEN ANOTHER GREAT PLACE TO JUST FIND LOTS OF LINKS AND TRUSTED RESOURCES.

SO, AGAIN, I WANT TO WELCOME TARA KENNEDY, SHE TAUGHT OUR CLASS LAST WEEK ON COLLECTIONS ENVIRONMENT.

SHE WORKS AT PRESERVATION FIELD SERVICES LIBRARY AT YALE AND DOES PRESERVATION CONSULTING AS WELL.

TARA THANKS FOR JOINING US.

>> I WILL THIS IS AN APPROPRIATE TOPIC FOR ME TO BE TALKING ABOUT TODAY.

ABOUT WHAT I AM GOING TO TALK ABOUT TODAY.

SO, I'M GOING TO TALK ABOUT MOLD
AND EXPLAIN WHAT IT IS.

CONTRIBUTING FACTORS TO HOW MOLD
CAN GROW AND MULTIPLY.

HOW YOU CAN PREVENT MOLD
OUTBREAKS.

HEALTH HAZARDS ASSOCIATED WITH
MOLD AND MOST IMPORTANTLY HOW TO
RESPOND TO A MOLD OUTBREAK AND
WHAT TO DO IN TERMS OF RECOVERY
FROM A MOLD OUTBREAK.

AND AT ANY POINT IF ANYONE HAS
ANY QUESTIONS AS KRISTEN SAID
THE Q&A BOX YOU ARE MORE THAN
WELCOME TO ASK YOUR QUESTIONS
THERE, I'LL BE TAKING -- TAKING
BREAKS IN BETWEEN SOME OF THE
SECTIONS TO ANSWER YOUR
QUESTIONS AS BEST I CAN.

HERE WE GO.

WHAT IS MOLD.

THE FIRST THING I WANT PEOPLE TO
UNDERSTAND ABOUT MOLD IS, IT'S
EVERYWHERE IT'S NOT GOING
ANYWHERE.

THE ONLY THING WE CAN DO IS TO
DISCOURAGE GROWTH AND
REPRODUCTION MAKING THE
ENVIRONMENT INHOSPITABLE FOR
GROWTH AND REPRODUCTION.

THAT MEANS KEEPING THINGS CLEAN
AND DRY ESSENTIALLY.

SURFACE MOLDS IS WHAT WE'RE
PRIMARILY CONCERNED WITH, WHICH
IS A SPECIFIC CLASS OF MOLD
CALLED CONIDIA FUNGI BECAUSE
THEY REPRODUCE BY PRODUCING
CANIDIA OR SPORE CARRIERS, WHAT
YOU SEE ON THE RIGHT THERE IS
ONE OF THOSE CANIDIA
ASPERGILLUSSAL THE LITTLE SPORES
ARE -- I'M GOING TO GET THE
ARROW TO WORK.

THIS IS THE SPORE CARRIER RIGHT
HERE THAT LOOKS LIKE A PIECE OF
BROCCOLI.

AND THIS IS -- THESE ARE THE

SPORES THAT WILL BE COMING OFF OF THE SPORE CARRIER OR THE CONIDIA.

THE SPORE CARRIERS ARE RELEASING SPORES IN TO THE AIR.

THEN THEY LET THE SPORES FLOAT AWAY SO THAT THEY CAN REPRODUCE. SAME THREE ACORNS WITH OAK TREE OR POLLEN THAT IS FROM ANY OTHER TYPE OF PLANT.

SOME OF THE DIFFERENT TYPES OF MOLD THAT YOU'LL -- THAT ARE SURFACE MOLDS THAT YOU WILL PROBABLY ENCOUNTER, ASPERGILLU, IS ONE OF THE MOST COMMON SPECIES.

PENICILLIUM WHICH IS PENICILLIN, THE ANTIBIOTIC.

ALSO THE MOLD IN CERTAIN TYPES OF CHEESE IN BLUE CHEESE AND STACHYBOTRYS WHICH IS KNOWN AS BLACK MOLD OR TOXIC BLACK MOLD IS SURFACE.

JUST TO SAY THAT MOLD IS BLACK DOESN'T NECESSARILY MEAN STACHYBOTRYS BUT GENERALLY CALLED THAT AT LEAST ITS COMMON NAME.

THE THING ABOUT THE SPORES THAT THEY ARE SPECIFICALLY DESIGNED TO SURVIVE.

SO THEY ONLY WILL GROW WHEN THEY HAVE CHANCE OF SURVIVAL, MEANING THAT THEY HAVE FOOD TO REPRODUCE AND HAVE THE RIGHT ENVIRONMENT.

WHAT YOU NEED TO REMEMBER IS THAT SPORES IN CONIDIA HAVE THICK CELL WALLS IF YOU REMEMBER BIOLOGY, AND CELLS AND THE CELL WALLS LIKE FOR PLANTS THAT HAVE REALLY THICK THEY ARE.

THEN IN ORDER TO KILL THEM YOU NEED TO BE ABLE TO PAT -- YOU NEED TO PENETRATE THAT CELL WALL TO ACTUALLY FULLY KILL THEM.

I'M GOING TO TALK ABOUT THE LIFE OF A SPORE.

YOU HAVE MATURATION AND RELEASE,
DORMANCY, ACTIVATION,
GERMINATION, THE HYPHAE
COLONIZATION STAGE AND CONIDIA
FORMATION.

I'LL GO IN TO A LITTLE MORE
DETAIL.

THE NEXT COUPLE MUCH SLIDES.
IF YOU FOLLOW THE RED ARROW,
WHICH IS RIGHT HERE, YOU HAVE
THE CONIDIA WHICH IS RELEASING
SPORES IN TO THE AIR SO THAT THE
SPORES ARE FLOATING AROUND IN
SPACE TRYING TO FIND THE RIGHT
PLACE TO COLONIZE.

AN ENVIRONMENT THAT
WOULD ACTUALLY HAVE FOOD FOR IT
TO EAT I'LL TALK MORE ABOUT
THAT.

IT WOULD GO IN TO AN ACTIVATION
MODE.

THEN IT STARTS TO GERMINATE
WHICH IS WHEN THE SPORE WILL
ACTUALLY START TO TAKE HOLD IN
THE SPACE, IT FOUND THE RIGHT
ENVIRONMENT AND RIGHT NUTRITION
AND IT IS STARTING TO GROW.

LET ME -- SOMETHING I WANT TO
NOTE THE SPORES IN THE AIR,
ACTIVATION PERIOD, THE
GERMINATION PERIOD, THESE ARE
PORTIONS OF THE SPORE LIFE PSYCH
THEY'LL YOU'RE NOT GOING TO SEE.
YOU ARE NOT GOING TO SEE THE
SPORES FLOATING THROUGH THE AIR.
BUT WHEN YOU GET TO THE NEXT
STAGE WHICH IS THE

HYPHAE
STAGE YOU'LL SEE MOLD.

YOU CAN CALL IT THE QUOTE,
UNQUOTE, FUZZY STAGE.

THE HYPHAE START TO GROW ACROSS
AND DOWN IN TO THE SUBSTRAIT
WHETHER THAT IS YOUR BOOK OR
STRAWBERRY OR WHATEVER.

THEY START TO RELEASE DIGESTIVE
ENZYMES THAT START TO INGEST THE

FOOD SCORES.

THAT CAN BE PAPER, BOOK CLOTH,
THAT CAN BE DUST ON BOOK CLOTH.
IT ALSO CAN BE CALLED MYCELIUM.
THAT IS ANOTHER NAME FOR THE
HYPHAE STAGE.

MORE MOLD IS FORMED AT
THIS STAGE.

THEN THEY ARE READY TO BE
RELEASED AGAIN IN TO THE AIR AND
THE CYCLE CONTINUES ANEW.

SOME SPORE CHARACTERISTICS.

WE TALK ABOUT DORMANT CONIDIA
AND SPORES WE'RE TALKING ABOUT
THESE ARE THE -- THIS IS PERIOD
OF TIME WHERE THEY HAVEN'T FOUND
THE RIGHT ENVIRONMENT TO
ACTUALLY START BEING ACTIVATED.
WHILE THIS IS A LITTLE
FRIGHTENING, IF YOU THINK ABOUT
IT, THE DORMANT CONIDIA CAN
SURVIVE EXTREME ENVIRONMENTS,
FREEZING, IT'S A LITTLE
INTIMIDATING.

BUT ONCE THE CONIDIA HAVE BEEN
ACTIVATED AND GERMINATED THAT'S
NOT TRUE.

DORMANT CONIDIA CAN REMAIN
VIABLE OVER 20 YEARS WAIT FOR
THE RIGHT ENVIRONMENT.

ONE THING I WANT TO EMPHASIZE IN
THIS WORKSHOP IF YOU DON'T TAKE
ANYTHING AWAY FROM THIS, REMOVAL
IS KEY.

IF YOU KEEP YOUR COLLECTIONS
CLEAN AND DUST FREE, DO REGULAR
CLEANING, HAVE DUST COVERS,
THINGS LIKE THAT YOU'RE GOING --
KEEP THE ENVIRONMENT DRY YOU'RE
NOT GOING TO HAVE MOLD PROBLEMS.
BUT IN ORDER FOR THE COLLECTIONS
TO BE SAFE NOT HAVE WORRIES
ABOUT MOLD YOU NEED TO HAVE
THINGS CLEAN.

IF YOU REMOVE THEM, IF YOU
REMOVE ALL THE SPORES AND
CONIDIA THEY WILL NOT HAVE

CHANCE TO MULTIPLY.
THIS IS SOMETHING THAT HAS TO BE
CONSTANTLY DONE WITH CLEANING.
NOT A ONE TIME SHOT.
AS I SAID, MOLD IS EVERYWHERE,
UNFORTUNATELY.
SO, TIME FOR SOME SCARY VIDEOS.
I'M NOT EVEN GOING TO TRY TO
PRONOUNCE THAT RHIZOPUS -- MAYBE
I WILL.
STOLONIFER.
BLACK BREAD MOLD IS THE FIRST
VIDEO.
THE SEQUENCE YOU'RE ABOUT TO SEE
IS THIS PARTICULAR -- THIS BLACK
BREAD MOLD ON STRAWBERRIES AND
SEQUENCE SPAN OVER SEVEN DAYS
IMAGES ARE MADE AT TEN-MINUTE
INTERVALS.
I THOUGHT IT WOULD BE
INTERESTING FOR FOLKS TO SEE HOW
A MOLD DIGESTS THINGS VERY
QUICKLY.
[BELCHING]
>> ALL RIGHT.
I HOPE NO ONE JUST ATE LUNCH.
[Laughter]
THAT'S NOT EXACTLY CONDUCIVE TO
ONE'S APPETITE.
YOU GET THE IDEA THAT MOLD CAN
BE VORACIOUS ONCE IT GETS
STARTED.
THANK YOU.
I THOUGHT IT WAS FUNNY, TOO.
WAIT, IT GETS FUNNIER.
HERE IS THE NEXT ONE.
THIS IS A WHITE OYSTER MUSHROOM.
THIS IS ACTUALLY AN EDIBLE
MUSHROOM WHICH IS FUNNY THIS
SEQUENCE IS MUCH LONGER
SEQUENCE, THIS IS ONE MONTH AND
24 DAYS.
BUT I HAD TO SHOW IT BECAUSE
IT'S A COVER OF FABIO GETTING
DEVOURED BY MOLD.
I DON'T KNOW THE ELAPSED TIME.
PROBABLY ABOUT EVERY TENAMENT

THAT SEEMS TO BE THE GENERAL RUN FOR THESE CORNELL VIDEOS.

THIS IS NOT TO SAY THAT MUSHROOMS ARE GOING TO START SUDDENLY GROWING IN YOUR COLLECTIONS, IN THAT PARTICULAR INSTANCE THE BOOK WAS ACTUALLY INOCULATED WITH A PARTICULAR MOLD STRAIN.

BUT I THOUGHT THAT WOULD BE ENTERTAINING.

TO COUNTERACT THE REALLY GROSS ONE THAT I SHOWED YOU.

SOURCES OF SPORES IN CONIDIA AS I MENTIONED THE CONIDIA RELEASED SPORE IN TO THE ERA GREAT DEAL OF YOUR MOLD SOURCES ACTUALLY COMING FROM THE AIR.

UNLESS YOU HAVE WICKED GREAT FILTRATION SYSTEMS IN YOUR -- I'M FROM NEW ENGLAND, WICKED. REALLY GOOD FILTRATION SYSTEMS IN YOUR COLLECTIONS AREA.

THERE'S GOING TO BE SOME MOLD THAT GETS IN.

THESE ARE TEENY, TINY PARTICLES THAT YOU CAN SEE RANGING FROM ONE TO 100 MICROMETERS.

THAT'S REALLY SUPER TINY.

IF YOU HAVE REALLY GOOD FILTRATION SYSTEM WHICH I MENTIONED IN TEMPERATURE AND RELATIVE HUMIDITY LECTURE, THERE WAS A PDF THAT I HAD MADE AVAILABLE ABOUT THE DIFFERENT LEVELS OF FILTRATION.

YOU CAN ACTUALLY GET IF YOUR SYSTEM CAN HANDLE IT YOU CAN HAVE FILTRATION THAT'S REALLY GOOD THEN WILL KEEP OUT LOT OF MOLDS THAT ARE IN THE AIR.

COMES FROM PLANTS, GENERAL DUST, FOOD, SELECTIONS, MATERIALS, A LOT OF DIFFERENT SOURCES.

THROUGH THE HISTORY OF THE THING OR JUST GENERAL USE AND GENERAL HISTORY OF THE ITEM.

SOMEONE ASKED THE QUESTION, CAN MOLD SPREAD TO OTHER NEARBY ITEMS?

YES, IT CAN.

ESPECIALLY IF YOU HAVE ACTIVE CONIDIA IT WOULD BE VERY EASY FOR THEM TO SPREAD.

HERE IS AN EXAMPLE OF FUNGI OUT IN THE FOREST YOU CAN SEE THE VISIBLE SPORES THAT ARE BEING RELEASED FROM THIS PARTICULAR PLANT.

THIS IS SOME SORT OF MUSHROOM I'M SORRY I DON'T RECALL WHAT IT WAS.

I THINK IT'S CALLED A GIANT PUFF BALL MUSHROOM, I BELIEVE IS WHAT IT'S CALLED.

YOU CAN SORT OF SEE IT -- THIS NEXT SHOT IS MICROSCOPIC SHOT OF AN AIR QUALITY SAMPLE, WHEN PEOPLE COME IN TO SEE AIR TESTING OR QUALITY TESTING THIS IS WHAT THEY'RE DOING.

YOU CAN SEE THAT THERE IS DIFFERENT TYPES OF -- THERE IS ALLERGENS LIKE RAGWEED ALSO YOU CAN SEE THE DIFFERENT MOLD SPORES.

YOU CAN SEE THEY'RE FROM DIFFERENT DASH AT LEAST IN TERMS OF THEIR SHAPE AND SIZE THEY'RE GOING TO VARY.

SO, HERE IS ACTIVE OF ACTIVE VERSUS INACTIVE MOLD GROWTH.

THE PICTURE ON THE LEFT IS AN ACTIVE MOLD GROWTH SAMPLE.

SO, I -- SOME OF THE CHARACTERISTICS I LIKE TO CALL FOR ACTIVE MOLD ARE SQUISHY, SPONGEY, FLUFFY, THOSE ARE KIND OF THINGS THAT YOU WOULD USE -- CHARACTERISTICS YOU'D USE TO DESCRIBE ACTIVE MOLD.

INACTIVE MOLD, DRY, POWDERY, AND DUSTY.

WHAT I WANT TO STRESS IS AS I

SAID EARLIER, IT IS IMPORTANT 20
GET RID OF BOTH KINDS AS BOTH
ARE TO THE HEALTH OF YOU, YOUR
STAFF, PATRONS.

SOME EARLY INDICATORS THAT THERE
MAY BE PROBLEMS IN YOUR
COLLECTIONS, THE PRESENCE OF
INSECTS.

AND THE IMAGE ON YOUR RIGHT YOU
PROBABLY SAW THE OTHER DAY IT'S
BOOKLAUSE, THEY EAT MICROSCOPIC
MOLD, THAT IS ONE OF YOUR FOOD
SOURCES.

IF YOU HAVE A BOOK LICE PROBLEM
THAT MAY BE AN INDICATER THAT
THERE IS A PROBLEM WITH MOLD IN
YOUR COLLECTIONS.

THEY DO TEND TO EAT OTHER THINGS
BUT MOLD IS ONE OF THEIR -- THE
HIGHER STAPLES OF THEIR DIET.

OF COURSE, THE TELLTALE ODOR
THAT MUSTY, EARTHY, DAMP SMELL.
THAT SMELLS LIKE A CLOSED UP
BASEMENT.

INCIDENTALLY, THOSE ARE VOLATILE
ORGANIC COMPOUNDS THAT THE MOLD
IS RELEASING AS IT MULTIPLIES
AND GROWS.

THAT'S WHAT YOU'RE SMELLING.
LET'S SEE, I SEE SOME QUESTIONS
OVER HERE.

IS THIS TYPE OF MOLD POISONOUS
TO EAT LIKE ON THE STRAWBERRIES.
I ACTUALLY DON'T KNOW IF BLACK
BREAD MOLD IS POISONOUS BUT
DOESN'T LOOK TERRIBLY APPETIZING
I WOULDN'T TRY TO EAT IT.

WHAT IS THE DIFFERENCE BETWEEN
FUNGAL AND MOLD.

THERE IS NO DIFFERENCE, JUST
DIFFERENT WAYS OF DESCRIBING FUN
GUY.

IT'S A TYPE OF FUNGI BASICALLY
FUNG YES, IS LARGER CATEGORY
MOLD IS ONE OF THEM.

MICRO
ENVIRONMENTS ARGUED THING BUT

WHEN I TALK ABOUT TEMPERATURE AND RELATIVE HUMIDITY BUT ALSO IF THEY'RE NOT DONE CORRECTLY THEY CAN ALSO CREATE PROBLEMS WITH MOLD.

THESE CAN HAPPEN IN ENVIRONMENTS THAT ARE CONTROLLED OR NOT. SOME OF THE MOST COMMON ONES ARE LISTED HERE, BEHIND SHELVES WHERE AIR CIRCULATION ISN'T THAT GOOD.

THAT'S A LOT OF WHERE -- LOT OF PROBLEMS CAN HAPPEN THERE. THAT CAN BE THE BACK OF SHELVES IN BETWEEN A WALL, ESPECIALLY IF THAT WALL OR OUTSIDE -- DOESN'T HAVE A VAPOR BARRIER OR GOOD INSULATION.

BASEMENT FLOOR STORAGE AND CARDBOARD BOXES.

DAMP MICRO ENVIRONMENTS DUE TO LOCATION OF WATER THAT CAN BE SINKS, BATHROOMS, COLD WALLS, WINDOW SILLS, LEAKS, THINGS LIKE THAT.

PLACES WHERE THERE WAS A WATER INCIDENT WHERE DRYING DID NOT TAKE PLACE IMMEDIATELY.

SHOW YOU SOME EXAMPLES SHEER EXAMPLE OF SOME CARDBOARD BOXES IN THE BASEMENT.

THEY HAVE GOT THE RIGHT ENVIRONMENT SINCE IT'S A DAMP BASEMENT AND THEY HAVE GOT ORGANIC MATERIAL TO EAT, THAT WOULD BE THE CELLULOSE IN THE BOXES AND WHATEVER ELSE MIGHT BE IN THE BOXES.

I'MER IS RETHIS PICTURE IS A LITTLE BIT BLURRY BUT IT'S SORT OF WHAT I WANTED TO SHOW, IT WAS IN CONJUNCTION WITH A DATA LOGGER I THOUGHT THIS WOULD BE A GOOD PICTURE TO SHOW FOLKS.

YOU CAN SEE ON THE RIGHT THERE THAT THE TEMPERATURE RELATIVE HUMIDITY ARE -- TEMPERATURE IS

70 DEGREES AND RELATIVE HUMIDITY IS 37%.

YOU WOULDN'T ANY THAT'S CONDUCIVE MOLD GROWTH.

BUT IN THIS PARTICULAR CASE, THE AIR CIRCULATION WAS REALLY POOR IN THIS PART OF THE LIBRARY. MOLD DID END UP GROWING WHEN RELATIVE HUMIDITY WAS AT A HIGHER POINT EARLIER IN THE YEAR.

IT ACTUALLY IS VARIETY OF THINGS THAT CAN CAUSE MOLD TO GROW. THIS IS A PASTE DOWN OF LARGE BOUND NEWSPAPER.

THIS WAS A SLOW LEAK THAT WAS HAPPENING BEHIND A WALL.

THIS BUILDING WAS JUDD UP AGAINST ANOTHER BUILDING THAT HAD BEEN BUILT THAT WAS NEW. WATER STARTED TOO SLOWLY LEAK IN BEHIND THE WALL.

THAT CONTAIN THESE BOUND NEWSPAPER VOLUMES THEY HAD HUMONGOUS MOLD OUTBREAK, IT WAS PRETTY SEVERE THEY HAD TO CALL IN RESTORATION COMPANY TO TAKE THE BOOKS AWAY, HAVE THEM FREEZE DRIED BECAUSE THEY WERE STILL WET AND HAVE THE MOLD CLEANED OFF OF THEM.

THIS IS ANOTHER EXAMPLE OF A MOLD OUTBREAK.

THESE WERE BOOKS THAT WERE SITTING NEAR AN OPEN WINDOW. IF I REMEMBER CORRECTLY FROM WHAT THE PERSON TOLD ME.

THEY LEFT THE WINDOW OPEN OVER THE WEEKEND BUT CLOSE ENOUGH WHEN THEY CAME BACK AFTER OVER THE WEEKEND MOLD HAD BEGUN TO GROW ON THESE BOOKS.

WE HAD TO HAVE THOSE CLEANED. I TAKE A PAUSE HERE AT MOLD PREVENTION.

I CAN LOOK AT SOME OF THE --
COULD SOMEONE SCOOT PARKING LOT

OVER JUST A LITTLE BIT TO THE LEFT SO I CAN READ THE WHOLE QUESTION.

LISA, WE QUARANTINE GROUP OF CANVAS PAINTING WITH MOLD, THE PAINTINGS LEFT THE BUILDING BUT WHAT SHOULD WE DO TO CLEAN THE ROOM, THE CARPET DID WE NEED TO REPAINT THE ROOM.

WE WILL BE GETTING TO THAT IN A LITTLE BIT, LISA, JUST HANG NIGHT I WILL ANSWER THAT QUESTION FOR YOU.

[Laughter]

IS VOLATILE ORGANIC COMPOUNDS A PHYSICIAN SEE WAY OF SAYING MOLD POOP?

THAT'S AWESOME.

NOT EXACTLY.

IT'S SORT OF WAY OF --

OFF-GASSING ITS REPRODUCTION, I'M NOT SURE THAT IT'S SOMETHING THAT ACTUALLY IS MOLD EXCREMENT, EXACTLY.

I DON'T KNOW IF I WOULD CALL IT MOLD POOP SOMETHING THAT'S BASICALLY OFF-GASSED WHILE REPRODUCING.

MAYBE IT'S MOLD SWEAT.

I'M NOT REALLY SURE.

DIANA ASKS, IS FOXING A TYPE OF MOLD.

YES, IT IS, ONE IS CALLED SNOWFLAKE FOXING IT LOOKS LIKE SNOWFLAKES THAT IS ACTUALLY MOLD.

IF YOU SEE SOMETHING LIKE THAT THAT IS VERY DIFFICULT DO GET RID OF BECAUSE IT'S EMBEDDED IN THE PAPER THAT REQUIRES PAPER CONSERVATORS INTERVENTION BECAUSE THAT REALLY -- WHAT'S SOMETHING THAT CAN'T JUST BE VACUUMED AWAY.

JUANITA, IF YOU SMELL MILDEW IN AN AREA BUT HOW DO YOU FIND THE SOURCE.

THAT'S A GOOD QUESTION.
YOU CAN SMELL -- LIKE YOU MIGHT
HAVE THE RIGHT ENVIRONMENT AND
IT MAY BE SOMEWHERE THAT'S
ACTUALLY NOT ON THE COLLECTIONS.
ONE WAY YOU CAN DETECT IF THERE
IS MOLD IS USING UV LIGHT.
WHAT I MEAN BY UV LIGHT ARE
THOSE UV LIGHTS THAT YOU CAN
FIND THEM AT PET STORES.
ACTUALLY THEY ARE USED IN FISH
TANKS AND THINGS LIKE THAT.
YOU CAN ACTUALLY USE THAT TO
SCAN THINGS TO SEE IF THERE IS
ACTUALLY MOLD ON THE SURFACE.
I USUALLY TELL PEOPLE TO USE
THAT IF THEY CAN'T TELL.
MOST MOLD WILL FLUORESCENCE IN
ULTRA VIOLET LIGHT YOU HAVE TO
MAKE SURE THAT YOU USE -- THAT
YOU MAKE SURE YOU WEAR EYE
PROTECTION BECAUSE ULTRAVIOLET
LIGHT CAN BE HARMFUL TO YOUR
EYES.
DON'T JUST SCAN THINGS WITH
ULTRAVIOLET LIGHT IF YOU DON'T
HAVE ANY EYE PROTECTION.
BUT THAT'S ONE WAY TO TELL IF
IT'S SOMETHING ON THE SURFACE
THAT YOU HAVEN'T NOTICED.
IF BOOKS ARE FREEZE DRIED AND
CLEANED CAN THE MOLD COME BACK.
YES AND NO.
LIKE I SAID MOLD IS EVERYWHERE.
IF YOU HAVE THE RIGHT
ENVIRONMENT IT CAN RETURN.
IT -- IF THEY HAVE BEEN CLEANED
AND FREEZE DRIED IT SHOULDN'T
RETURN PROVIDED YOU'RE NOT
PUTTING THEM BACK IN THE SAME
ENVIRONMENT.
I'LL TALK MORE ABOUT THAT.
I THINK SOME OF THESE ACTUALLY
MAY END UP -- WE'RE GOING TO
KEEP GOING HERE A LITTLE BIT
BECAUSE I THINK SOME OF THESE
QUESTIONS YOU'RE ASKING MAY BE

ANSWERED IN A LITTLE BIT.
WE'LL COME BACK TO THE PARKING
LOT IN A LITTLE WHILE.

LET'S TALK ABOUT MOLD
PREVENTION.

WHAT I -- WHAT I'D LIKE TO
EMPHASIZE, I EMPHASIZED EARLIER
GETTING RID OF EXTRA MOISTURE.
REDUCE RELATIVE HUMIDITY AND DEW
POINT.

AVOID STORING YOUR COLLECTIONS
IN DAMP AREAS.

KEEP YOUR RELATIVE HUMIDITY LOW
AROUND 40 TO 50% YOU DON'T WANT
IT TO GO ABOVE 60% IF YOU CAN
HELP IT.

DEFINITELY 70 IS REALLY WAY TOO
HIGH YOU DON'T WANT TO GO ABOVE
70 IF YOU CAN HELP IT.

USE DEHUMIDIFIERS IF YOU NEED
TO.

THAT IS -- WILL BE HELPFUL AND
WILL HELP REDUCE YOUR RELATIVE
HUMIDITY AND DEW POINT.

IN MY PREVIOUS LECTURE I HAD
SOME LINKS TO SITES THAT WILL
TELL YOU ABOUT WHAT KIND OF
DEHUMIDIFIER WILL BE APPROPRIATE
FOR YOUR SPACE.

GO -- IF YOU HAVE MOLD PROBLEM
GO AHEAD AND TAKE A LOOK AT SOME
OF THE DEHUMIDIFIER SITES WHICH
WOULD BE APPROPRIATE.

ENSURE AIR CIRCULATION AROUND
COLLECTIONS, THAT'S SUPER
IMPORTANT AS I MENTIONED WITH
THAT PICTURE WITH THE
TEMPERATURE AND RELATIVE
HUMIDITY THAT WASN'T THAT HIGH.
AIR CIRCULATION IN THAT SPACE
WAS REALLY POOR, THESE WERE
TIGHTLY PACKED SHELVES WITH LOTS
OF BOOKS WITH AN AIR SYSTEM THAT
BASICALLY WAS NOT STRONG ENOUGH
TO ACTUALLY CIRCULATE THE AIR
VERY WELL.

THAT REALLY CAUSED A LOT OF

PROBLEMS.

YOU WANT TO RESPOND QUICKLY TO WATER DAMAGE.

GET IT -- GET THE PLACE DRIED OUT, GET GIANT DEHUMIDIFIERS MAKE SURE THAT THE PLACE IS CLEANED WELL.

EXCUSE ME AS I DRINK SOME WATER. THERE ARE MATERIALS THAT CAN HOLD MORE WATERS THAN OTHER THEY WILL BE MORE SUSCEPTIBLE. THEY'RE CALLED HYDRO FILL LICK MATERIALS.

LITERALLY WATER-LOVING MATERIALS.

SOME OTHER MOLD PREVENTION TIPS. REGULARLY CHANGE YOUR AIR FILTERS, CLEAN YOUR DUCT WORK IF YOU HAVE HAD MAJOR OUTBREAK.

I WANT TO TALK ABOUT AN EXAMPLE OF A LIBRARY THAT I WORKED AT. ONE OF THEM HAD HAD CONSISTENT MOLD OUTBREAKS FOR -- LIKE EVERY COUPLE OF YEARS THERE WOULD BE SECTIONS OF THE LIBRARY THAT WOULD GET MOLD.

I EMPHASIZED TO UPPER LEVEL ADMINISTRATION FACILITIES THAT WHAT WE REALLY NEEDED TO DO WHY THIS KEPT HAPPENING BESIDES THE FACT THAT AIR CIRCULATION IN THE SPACE THERE WAS PROBLEMS WITH THE RELATIVE HUMIDITY WAS THAT THE DUCT WORK WAS PROBABLY THE SOURCE OF THE PROBLEM.

WHAT I WAS NOTICING WAS THAT THE MOLD WAS TARGETED IN AREAS THAT WERE RIGHT NEAR THE AIR SUPPLY VENTS.

YOU PRACTICALLY COULD SEE EXACTLY WHERE THE AIR WAS BLOWING FROM THE VENTS ON TO THE COLLECTION ITEMS WHERE THE MOLD WAS LANDING.

IT LOOKED EXACTLY LIKE, OKAY, MOLD SOURCE IS COMING FROM THE DUCT WORK.

SO I FINALLY CONVINCED THE ADMINISTRATION THAT THAT NEEDS TO BE DONE AND THEY CLEANED THE DUCT WORK THROUGHOUT THE ENTIRE BUILDING WE HAVEN'T HAD A MOLD OUTBREAK SINCE.

MY POINT IS, CLEAN THE DUCT WORK AFTER YOU'VE HAD A MOLD OUTBREAK BECAUSE NINE TIMES OUT OF TEN THAT IS WHERE THE MOLD IS HANGING OUT AND JUST GOING TO KEEP COMING BACK.

WHEN ONE PERSON ASKED ABOUT IF I HAVE THE COLLECTIONS FREEZE DRIED AND CLEANED WILL IT COME BACK.

IF YOU PUT IT BACK IN THE SAME SPACE WHERE THE DUCT WORK HASN'T BEEN CLEANED AND YOU HAVEN'T CHANGED AIR HANDLER FILTER REGULARLY PRETTY GOOD CHANCE THAT IT WILL.

CAUTIONARY TALE FOR EVERYONE. ISOLATE AND EXAMINE INCOMING COLLECTIONS.

THIS IS NOT ONLY HELPFUL FOR PREVENTING MOLD, POTENTIAL MOLD INFESTATION BUT ALSO INSECT AND RODENT PROBLEMS, TOO.

IT'S A GOOD IDEA TO HAVE ROOM THAT'S ISOLATED WHERE YOU CAN PUT COLLECTIONS TO BE OBSERVED TO MAKE SURE THAT THERE IS NO MOLD OR PEST PROBLEMS.

YOU CAN ALSO HAVE LOCKED CABINET IT DOESN'T HAVE TO BE A ROOM. YOU CAN ALSO DOUBLE BAG THINGS IN CLEAR PLASTIC BAGS SEAL THEM UPTIGHT.

THERE'S VARIETY OF WAYS YOU CAN OBSERVE COLLECTIONS WITHOUT HAVING TO HAVE THEM IN SEPARATE ROOM.

REGULAR HOUSEKEEPING, KEEP YOUR SHELVES AND OTHER SURFACES FREE OF DUST THIS IS REALLY IMPORTANT AS WELL.

AS I SHOWED YOU IN THE
MICROSCOPIC SAMPLE OF THE DUST
SAMPLE IN THE AIR QUALITY TEST
THERE IS MOLD SPORES IN YOUR
AIR.

WHICH IS IN THE AIR WHICH IS
PARTIALLY DUST YOU WANT TO MAKE
SURE EVERYTHING IS AS CLEAN AS
POSSIBLY BE.

USING DISPOSABLE STATIC RAGS
LIKE SWIFFERS ARE GREAT.

BECAUSE THEY USE STATIC TO PICK
UP DUST AND MOLD SPORES AND
THINGS LIKE THAT AND THEY'RE NOT
ADDING ANYTHING NEGATIVE TO YOUR
COLLECTION SURFACE.

EVEN SWIFFERS ARE LIKE ONES
FEATHER DUSTERS, DON'T GET THOSE
GET THE SWIFFERS.

HEPA FILTERED VACUUM.

THE REASON WHY YOU WANT TO USE
THESE IS BECAUSE THE MOLD WILL
BE KEPT INSIDE THE VACUUM AND
WILL NOT BE SPIT BACK OUT IN THE
BACK OF THE VACUUM BACK IN TO
THE ROOM.

IT'S REALLY GOOD FILTRATION.
THIS IS THE ONLY TYPE OF VACUUM
YOU WANT TO USE TO CLEAN MOLD.
I SEE SOMEBODY ASKING, HOW DO
YOU CLEAN DUCT WORK.

YES, THIS IS SOMETHING THAT
CONTRACT OR IS GOING TO DO.
SORRY I DIDN'T MENTION THAT.
I ACTUALLY HAD TO HAVE WE WE HAD
TO HAVE HIRE OUTSIDE COMPANY TO
COME IN AND ACTUALLY CLEAN THE
DUCT WORK.

WHAT THEY DO BASICALLY THEY WILL
CUT HOLES OR -- IN TO THE DUCT
WORK AND PUT GIANT VACUUMS TO
THE DUCT WORK AND SUCK
EVERYTHING OUT.

SPOT CLEAN THE INSIDE.
THEY WILL USE -- SOMETIMES USE A
FUNGICIDE ONMENT INSIDE
DEPENDING ON THE SURFACE OF THE

DUCT WORK AS FINAL STEP.
THAT'S SOMETHING THAT CONTRACTOR
WILL HAVE TO DO.

SORRY, I DIDN'T MENTION THAT.
INFESTATION AS MOLD WILL GROW ON
EVERYTHING AND ANYTHING PRETTY
MUCH.

ALMOST ANY TEMPERATURE, THEY
WILL -- IT WILL GROW OVERALL OR
RANDOM PATTERNS.

DIFFERENT MOLDS LIKE DIFFERENT
CONDITIONS AND DIFFERENT FOOD
SOURCES.

AND USUALLY YOU'LL SEE IT
PRIMARILY ON THE EXTERIOR OF
YOUR COLLECTIONS THAT WOULD BE
THE BINDING, BOXES, THAT SORT OF
THING.

BUT ALSO FIND END PAPERS, IN THE
GUTTERS OF BOOKS ON THE EDGES OF
PAPERS IN BOXES.

SHOW YOU COUPLE OF EXAMPLES.
THIS PICTURE HERE IS MICROFICHE
THIS IS REALLY GREAT EXAMPLE OF
SHOWING HOW PICKY IT CAN BE IN
HOW IT GROWS.

YOU CAN SEE MOLD IS ONLY -- COME
ON, ARROW.

THE POINTER DOESN'T WANT TO
BEHALF.

YOU CAN SEE THAT THERE IS
DIFFERENTIAL AREAS -- DIFFERENT
AREAS THAT THE MOLD IS GROWING
IN.

YOU GET THE IDEA OF HOW PICKY IT
CAN BE.

HERE IS ANOTHER EXAMPLE.

TAKE LOOK YOU CAN SEE THAT THERE
IS MOLD GROWING RIGHT ON THE
SPINE OF THAT THIN BOOK THERE.
WHAT THAT IS, A PAMPHLET BINDER
AND IT'S GOT -- NOW IT'S
WORKING.

THERE IT IS, RIGHT THERE.

THIS PAMPHLET WIPEDDER IS HERE,
HERE IS STARCH FILLED CLOTH YOU
CAN SEE THAT THE MOLD IS REALLY

DIGGING THE STARCH-FILLED CLOTH.
THAT IS WHAT IT'S HE'SING.
ALSO YOU CAN SEE HOW IT SPREADS
IT'S RIGHT HERE AND HERE THIS
BOOK STICKING OUT.

IT CAN BE REALLY RANDOM.
HERE IS MORE EXAMPLES OF WHERE
MOLD CAN GROW.

YOU CAN FIND IT ON REELS OF
FILM, ON REELS OF MICRO FILM,
YOU CAN FIND IT ON RECORDS.
YOU CAN FIND IT ON PAPER.

HEALTH HAZARDS.

HERE IS SOMETHING I WANT TO
EMPHASIZE ALL MOLDS POSE A
HEALTH RISK SOME PEOPLE ARE MORE
AT RISK THAN OTHERS.

WHAT THAT MEANS IS -- MOST WHO
ARE AT RISK ARE PEOPLE WITH
COMPROMISED IMMUNE SYSTEMS.
PEOPLE HAVE ALLERGIES TO MOLD OR
PENICILLIN OR THAT SORT OF
THING.

YOU DON'T WANT THOSE PEOPLE
HELPING IF THERE IS A PROBLEM IN
YOUR COLLECTIONS.

FOR MOST PEOPLE MOLD IS A
DESENSITIZER IT BECOMES AN
IRRITANT THEN IT CAN BECOME AN
ALLERGEN IT CAN TRIGGER THINGS
LIKE WATERY EYES, STUFFFY NOSE
THEN LATER CAN BECOME TOXIC IT
DEPENDS ON THE MOLD AND THE
INDIVIDUAL.

AS I MENTIONED ABOUT
STACHYBOTRYS, ONE OF THE TOXIC
VARIANTS AND USUALLY GROWS ON
CONSTRUCTION MATERIALS, IT'S NOT
NECESSARILY SOMETHING THAT'S
GOING TO BE GROWING ON YOUR
COLLECTIONS.

HERE IS A PICTURE OF THAT ON
SOME DRY WALL.

IT LOVES DRY WALL.

THAT'S THE FIRST PLACE YOU WANT
TO LOOK.

IN CASE OF MOISTURE OR MOLD

PROBLEMS YOU DEFINITELY WANT TO CHECK YOUR DRY WALL MAKE SURE EVERYTHING IS OKAY THERE.

ONLY WAY TO KNOW IF A MOLD IS REALLY, QUOTE, UNQUOTE, TOXIC MOLD ONE THAT IS INHERENTLY TOXIC LIKE THAT IS TO HAVE THEM TESTED YOU HAVE TO TEST ALL OF THEM.

THERE ARE COMPANIES THAT WILL DO AIR QUALITY TESTING FOR YOU TO TELL WHAT YOU KIND OF MOLD IS ON THE SURFACE OF YOUR OBJECT OR IS IN THE AIR IN THE GENERAL AIR IN YOUR COLLECTION SPACE OR MUSEUM OR HISTORICAL SOCIETY OR THAT SORT OF THING.

MOST OF THE TIME IT'S GOING TO BE ASPERGILLUS IS THE COMMON MOLD, THAT'S WHAT I SEE WHEN I'VE GONE IN TO COLLECTION SPACES AND THE MOLD GROWING MOST OF THE TIME IS THAT.

I CAN TELL JUST FROM SEEING IT BECAUSE I'VE SEEN IT SO MANY TIMES.

MOST IMPORTANT THING -- KEEP CALM IF YOU DO HAVE MOLD OUTBREAK.

I'M GOING TO TALK A LITTLE BIT ABOUT RESPONSE AND RECOVERY. BUT NUMBER ONE, KEEP CALM AND CARRY ON.

I'M GOING THROUGH THE STEPS I'LL TALK ABOUT IN TERMS OF RESPONSE. CONFINE THE OUTBREAK.

I'M GOING TO GO OVER THESE A LITTLE MORE DETAIL IN THE SLIDES THAT ARE COMING UP.

DON'T WORRY.

I'M GO THROUGH RESPONSE AND RECOVERY SLIDES THEN I WILL GO OVER TO THE QUESTIONS AND SEE IF ANY OF THEM AREN'T ANSWERED IN THE STEPS I'M ABOUT TO TALK ABOUT.

I SEE YOUR QUESTIONS, I PROMISE

I WILL GET TO THEM.
FOR RESPONSE THESE ARE THE STEPS
THAT YOU WANT TO TAKE THAT
YOU'RE GOING TO TAKE.
CONFINE YOUR OUT BREAK, STOP THE
GROWTH OF THE MOLD.
KILL THE ACTIVE MOLD GROWTH AND
TAKE STEPS TO PREVENT
RE-INFESTATION.
IDEALLY RESPONSE AND RECOVERY
WILL BE DONE BY A VENDOR AND NOT
BY IN HOUSE STAP.
DON'T DO ANYTHING, DON'T GO NEAR
IT UNLESS YOU HAVE YOUR PERSONAL
PROTECTIVE EQUIPMENT.
WHICH IS PPE IS WHAT IT'S OFTEN
SAID IN SHORTHAND.
TALK ABOUT PPE BECAUSE THIS IS
SUPER IMPORTANT.
GLOVES, YOU CAN AVENUE TRIAL
GLOVES OR LATEX GLOVES 789
7/8ths MASK, YOU CAN
GET FULL OR HALF-FACE
RESPIRATIONS, REQUIRES MEDICAL
APPROVAL AND FIT TESTING.
IF YOU ARE CONNECTED TO THE
UNIVERSITY OUR OFFICE OF
ENVIRONMENT HEALTH AND SAFETY
THEY CAN RECOMMEND A RESPIRATOR
AND DO FIT TESTING FOR YOU.
THEY ARE ALSO COMPANIES THAT
WILL DO IT FOR YOU AS WELL.
IF YOU CHOOSE TO DO THAT.
YOU CAN ALSO PURCHASE N95 OR
N100 PARTICULATE RESPIRATORS.
YOU WANT TO WEAR GLASSES OR
GOGGLES THAT WILL COVER, PROTECT
YOUR EYES SO THAT THE.
AND PROTECTIVE CLOTHING.
HERE IS AN EXAMPLE OF SOME FOLKS
WHO ARE DOING SOME MOLD CLEANING
END THE STACKS YOU CAN SEE THEY
GOT THEIR COVERALLS ON THAT
INCLUDE A HOOD, SO THAT THEIR
HAIR IS COVERED THEY'RE NOT
WEARING BEST GOGGLES BUT SAFETY
GLASSES.

THEY'RE WEARING RESPIRATORS IT
LOOK LIKE THEY'RE WEARING
NITRILE GLOVES.

THEY'RE PRETTY WELL SUITED UP
FOR THE TASKS.

SOMETHING ELSE I WANT TO CLOSE
OUT IS IT A DUST MASK OR
RESPIRATOR.

PEOPLE WILL MIX THAT UP.

A DUST MASK WHAT THAT IS JUST
SOMETHING THAT'S GOING TO HELP
WITH WHAT YOU MIGHT WANT TO CALL
NUISANCE DUST.

THE PERSON ALSO DOESN'T HAVE IT
ON VERY WELL IT'S PRETTY LEAKY
ON THE SIDES.

THIS IS GOING TO PROTECT FROM
YOU SAW DUST OR THINGS THAT ARE
LARGE PARTICULATES THAT YOU CAN
SEE.

AND IT'S NOT A GREAT TOOL TO
PROTECT FROM YOU MOLD.

IT ALSO WON'T HELP WITH ANY SORT
OF SOLVENTS OR ANYTHING LIKE
THAT.

NOR WILL SOLVENTS WON'T WORK
ALSO WITH THE N95 PARTICULATE
RESPIRATOR EITHER.

EMPHASIZE ON PAR PARTICULAR
COULD YOU LATE.

HERE IS N95 THEY ARE LABELED
RIGHT ON IT THIS FROM 3M LABELED
THAT IT'S N895 RIGHT THERE.

ANOTHER GOOD INDICATOR IS THE
TWO STRAPS, USUALLY DUSK MASKS
WILL THAT HAVE JUST ONE LIKE YOU
SEE HERE THIS ONE IS TWO.

YOU CAN SEE IN THIS PICTURE OVER
HERE THERE'S TWO STRAPS ONE GO
THAT GO WAY, ONE GOING THAT WAY.

THAT'S PRETTY GOOD INDICATOR
THAT IT'S N95 MESS RIVER RATER.

ALSO WILL SAY ON THE BOX.

IF YOU GET FROM LAB SAFETY
SUPPLY.

NUMBER ONE, CONFINING THE
OUTBREAK.

WHEN YOU HAVE A LARGE INCIDENT
YOU WANT TO ISOLATE THE AREA
CREATE NEGATIVE PRESSURE ROOM TO
ENSURE THAT THE MOLD DOESN'T
SPREAD TO OTHER AREAS.

THAT INCLUDES SHUTTING DOWN ANY
AIR HANDLING VENTS THAT MAY
RETURN AIR TO DIFFERENT AREA.
SOME PEOPLE DON'T THINK ABOUT
THAT.

IF YOU CAN'T CLOSE YOUR VENTS
GET BIG PIECES OF MAGNET LIKE
THINGS THAT ARE STRIP MAGNET PUT
RIGHT OVER THE VENT IF YOU NEED
TO.

HERE IS NICE EXAMPLE OF AN
ISOLATION AREA.

PEOPLE GET IN AND OUT THROUGH A
ZIP, THIS IS I THINK THE ZIP
AREA HERE YOU CAN UNZIP PEOPLE
CAN GO IN AND DO WHATEVER
THEY'RE GOING TO DO AND ZIP IT
CLOSED.

FOR SMALLER INCIDENTS YOU CAN
PACK THE OBJECTS IN TYVEX, SPUN
POLYESTER FOR ZIPLOCK BAGS.
ONLY IF THE MATERIALS AREN'T WET
BECAUSE IF YOU WRAP THEM UP AND
THEY'RE WET THEN GOING TO END
UP -- MOLD IS GOING TO GET
WORSE.

THEN MOVE COLLECTIONS TO A
QUARANTINE AREA.

HERE IS AN EXAMPLE OF MOLDY
ITEMS THAT ARE IN A PLASTIC BAG
YOU CAN SEE JUMBO SAYS THERE,
THESE ARE REALLY BIG BOOKS.

EXCUSE ME WHILE I COUGH.

YOU WANT TO STOP THE GROWTH
THAT'S STEP NUMBER TWO.

YOU CAN DO DEHUMIDIFICATION IN
SITU, IF YOU HAVE THAT SPACE YOU
CAN PUSH DRY AIR IN THE SPACE TO
DRY OUT THE SPACE.

BY USING INDUSTRIAL SIZED
DEHUMIDIFIERS.

DROPPING THE TEMPERATURE ISN'T

GOING TO BE ENOUGH TO DRY OUT A SPACE.

MOSTLY BECAUSE IF YOU REMEMBER FROM THE TEMPERATURE AND RELATIVE HUMIDITY LECTURE THAT WE HAD THE COOLER THE AIR BECOMES THE MORE MOISTURE IT CAN HOLD.

RELATIVE HUMIDITY IS GOING TO GO UP AND MATERIALS ARE GOING TO ABSORB MORE WATER.

IT'S BEST TO DRY THE AIR, DROP THE DEW POINT AND RELATIVE HUMIDITY.

IF IT'S WATER AS WELL AS MOLD AIR DRYING WON'T STOP THE INKS FROM BLEEDING.

THEY'RE GOING TO STICK.

YOU'RE GOING TO HAVE DISTORTION OF OBJECTS.

SUNLIGHT DOESN'T KILL MOLD

THAT'S AN OLD WIVES TALE.

MOST LIKELY THE DEHYDRATION

HELPING WITH THE MOLD

ULTRAVIOLET LIGHT DOES KILL SOME MOLD BUT NOT ALL OF THEM.

HERE IS EXAMPLE OF SOME -- THIS IS IN INDUSTRIAL SIZE

DEHUMIDIFIER.

YOU CAN DO IT PROVIDED THAT YOU HAVE -- EVEN IF YOU DON'T HAVE THE SPACE SEALED OFF IF YOU HAVE ENOUGH INDUSTRIAL STRENGTH DEHUMIDIFIERS THAT CAN BE SUFFICIENT TO DRY A SPACE.

THIS IS SPACE WHERE ALSO SEALED OFF.

YOU CAN SEE A SEALED ROOM AND THIS IS ME ACTUALLY DOING SOME RECOVERY FOR AN ARTIST IN BROOKLYN.

I HAVE MY PROTECTIVE EQUIPMENT ON BUT I WANTED TO SHOW THIS IS AN ISOLATED SPACE THERE'S AN AIR SCRUBBER THAT WAS KEEPING THE AIR IN THE SPACE CLEAN BECAUSE THERE WERE HUNDREDS OF DRAWINGS

AND PRINTS IN THIS ROOM THAT WERE COVERED IN MOLD.

STOP THE GROWTH AND KILL THE MOLD.

FREEZING DOES -- IT STOPS THE GROWTH ANY MOLD THAT IS ACTIVE IS KILLED BECAUSE WHAT'S HAPPENING IS MOISTURE, THE ICE ACTUALLY GETS INSIDE SOMEHOW GETS IN WATER CONTENT OF THE ACTUAL CELLS OF THE SPORES AND FREEZES AND MAKES THE SPORES BURST.

THAT'S HOW THEY'RE KILLED.

THANK YOU.

AND THAT ALSO PUTTING THINGS BUYS TIME FOR DECISION MAKING AND RECOVERY PREPARATION.

DO YOU WANT TO USE CAUTION WHEN YOU FREEZE MUSEUM OBJECTION ANYTHING THAT IS COMPOSITE, VENEERED WOOD, GLASS PLATE NEGATIVES SOME PHOTOGRAPHIC MATERIALS YOU MAY NOT WANT TO FREEZE THEM.

EXPANSION AND CONTRACTION MAY CAUSE PROBLEMS IN COMPOSITE ITEMS TALK TO A CONSERVATOR IF THESE AREN'T STRAIGHT FORWARD ARCHIVAL PAPERS, SOMETHING WHERE IT'S A MORE COMPLEX OBJECT YOU'RE GOING TO NEED TO TALK TO A CONSERVATOR.

FREEZING THEN AIR DRYING CAN REACTIVATE MOLD.

YOU WANT TO BE CAREFUL ABOUT THAT.

THAT'S DUE TO THE INCREASED MOISTURE BECAUSE THE ICE IS MELTING THEN YOU ARE REHYDRATING THE PAPER AND CONIDIA THAT ARE PRESENT CAN BLEED YOUR COATING PAPER CAN STICK AND DISTORTION OF OBJECTS CAN OCCUR.

YOUR BETTER BET IF YOU CAN DO IT IS VACUUM FREEZE DRYING.

WHAT THIS IS -- WHAT VACUUM

FREEZE DRYING IS, BASICALLY YOUR COLLECTIONS ARE PUT IN TO VACUUM CHAMBER WHICH I'LL SHOW.

AND THE WATER YOU FREEZE THE MATERIALS AND THEN IT CREATES, THE SPACE IS CREATED PUT AT LOW ENOUGH PRESSURE THAT THE PHASE OF THE ICE CHANGES FROM SOL TODAY A GAS SO IT SKIPS THE WATER PHASE SO YOU DON'T HAVE TO WORRY ABOUT INKS BLEEDING.

THERE IS SOME DISTORTION INVOLVED BUT NOT AS BAD AS WHEN DO YOU AIR DRYING.

YOU'LL HAVE LESS DISTORTION AN SIZE INCREASE THAN IF YOU DO AIR DRYING.

ALSO HELPS WITH COATED PAPER.

IF YOU HAVE LARGE ART BOOK COLLECTION THAT GOT WET AND IS MOLDY THIS IS YOUR BEST BET.

ONCE IT'S FREEZE DRIED THEN YOU CAN CLEAN THE MATERIALS AFTER IT'S DONE.

THIS IS REALLY GREAT IF YOU HAVE REALLY LARGE OUTBREAK IN A LIBRARY OR ARCHIVE.

HERE IS A PICTURE OF THE INSIDE OF FREEZE DRIED CHAMBER.

ALL OF THE MATERIALS ARE SITTING ON SHELVES AND THE WHOLE PROCESS TAKES PLACE INSIDE THE CHAMBER.

IT'S PRETTY NEATO.

SCIENCE IS COOL.

ESPECIALLY THE WHOLE PHASE CHANGE THING I THINK --

SUBLIMATING IS REALLY COOL.

I'LL TALK ABOUT FUNG SIDES.

IN A LOT OF CASES THEY CAN REALLY HAVE PROBLEM -- YOU ONLY WANT TO USE THIS IF THERE IS NO OTHER SOLUTION.

SOME CHEMICALS ONLY STOP GROWTH THEY DON'T KILL THEM THOSE ARE CALLED FUNGISTAT, IS THAT IS SOMETHING TO KEEP IN MIND ETHYLENE OXIDE SOMETHING THAT

USED TO BE USED QUITE OFTEN IN THE PAST TO KILL MOLD.

IT WILL INCREASE SUSCEPTIBILITY OF FUTURE OUTBREAKS, IT'S A HUGE HEALTH AND SAFETY RISK AND BANNED SO I DON'T RECOMMEND USING THAT.

HERE IS THE THING THAT SOMEONE HAD ASKED.

PREVENTING REINFESTATION.

CLEAN THE ENTIRE SPACE NOT JUST THE COLLECTIONS.

CLEAN IT WITH A HEPA FILTER VACUUM, SMOKE SPONGE I'LL TELL WHAT YOU THIS IS, WIPE DOWN SHELVING.

YOU CAN USE ONE CUP BLEACH TO ONE GALLON OF WATER TO CLEAN THE SHELVING THEN DRY THOROUGHLY AFTERWARDS.

REPLACE ANY CARPET, PADDING, FURNITURE, WALL WORD, ANYTHING THAT WAS MOLDY OR SUSPECT WAS MOLDY EVEN IF IT GOT WET IF YOU CAN REPLACE IT, REPLACE IT.

REPLACE AND EQUIPMENT OR PLUMBING THAT MAY HAVE CAUSED THE PROBLEM.

BEGIN ENVIRONMENTAL MONITORING PROGRAM THEN THAT WAY YOU WILL KNOW IF THERE IS A RELATIVE HUMIDITY PROBLEM IN YOUR SPACE BEFORE THINGS START TO HAPPEN THAT'S REALLY HUGE.

ALSO WITH THE REINFESTATION YOU CAN CLEAN DUCT WORK THAT'S HUGE THING.

THIS IS A PICTURE FROM KATRINA, ACTUALLY.

IT SHOWS YOU IN THE PICTURE HERE WHERE THE WATER LINE WAS, IF I CAN GET YOU AGAIN ARROW DOESN'T -- POINTER DOESN'T WANT TO WORK WITH ME.

I AM DOING -- I DON'T KNOW WHY IT WON'T WORK.

I'M SORRY.

IF YOU SEE WHERE THE -- THERE IT GOES.

WAIT, COME BACK.

THIS IS WHERE THE WATER LINE IS, IT CAME UP TO HERE.

BUT THE MOLD GROWTH WENT BEYOND THE WATER LINE.

ALL THE WAY UP TO HERE.

DON'T SUSPECT THAT IF WATER LINE CAME UP TO HERE BECAUSE MOLD CAN GROW ABOVE THAT.

BECAUSE THE MOISTURE CONTENT OF THE DRY WALL EASILY COULD HAVE BEEN INCREASED BY THE WATER THAT HAD COME IN TO THE ROOM.

ALSO SIGN THAT MOLD MAY NOT HAVE BEEN ABLE TO GROW BECAUSE OF WHATEVER WAS IN THE WATER LIKE WASN'T CONDUCIVE TO LETTING MOLD GROW WHICH IS REALLY ICKY THOUGHT.

IN OTHER WORDS, CHECK UP A LOT FURTHER THAN YOU THINK YOU NEED TO WHEN REPLACING DRY WALL IT'S REALLY IMPORTANT.

FOR COLLECTIONS RECOVERY ALWAYS ASSUME HEALTH HAZARD WHERE YOUR PPE, YOUR MASK, GLOVES, VERY IMPORTANT TO DO.

PROTECT YOURSELF THEN WORRY ABOUT THE COLLECTIONS.

INACTIVE MOLD NEEDS TO BE REMOVED TO ENSURE SAFE TO USE AGAIN ALSO MAKE SURE TO PREVENT RE-INFESTATION.

AS I MENTIONED REMOVING IS KEY WHETHER IT'S ACTIVE OR INACTIVE MOLD.

MOLD DOES DO PHYSICAL DAMAGE TO COLLECTIONS WE SAW WHAT THE MOLD DID TO THE STRAWBERRIES IN SEVEN DAYS IT CAN DO DAMAGE.

INHOUSE CLEANING SHOULD BE DONE BY TRAINED STAFF WITH KNOWLEDGE OF BEING ABLE TO HANDLE THE COLLECTIONS SAFELY BECAUSE THEY CAN BE FRAGILE AFTER THERE IS A

MOLD OUTBREAK BECAUSE MOLD CAN WEAKEN COLLECTIONS ESPECIALLY IF IT STARTED TO DIGEST THE PAPER THAT SORT OF THING.

THAT'S REALLY IMPORTANT.

REALLY WE'D LIKE TO EMPHASIZE, SHOULD YOU NOT CLEAN YOUR COLLECTIONS BY YOURSELF, LEAVE IT FOR THE PROFESSIONALS.

THAT'S REALLY IMPORTANT SIMPLY BECAUSE WE'RE WORRIED ABOUT PEOPLE'S HEALTH, PEOPLE CAN CAN AWFULLY CAVALIER.

WE WANT TO MAKE SURE THAT THE PEOPLE ARE SAFE FIRST AND THEN THE COLLECTIONS.

PLUS PROFESSIONAL WILL KNOW WHAT TO DO.

THEY HAVE LOT MORE AT THEIR DISPOSAL TO BE ABLE TO HELP YOU WITH CLEANING THE COLLECTIONS.

I THINK I MENTIONED EARLIER I HAVE LIST OF THREE DIFFERENT VENDORS THAT I HAVE WORKED WITH ON MOLD REMEDIATION THAT I RECOMMEND THAT YOU CAN CALL TO HELP WITH YOU THESE THINGS.

I HIGHLY RECOMMEND THAT YOU TALK WITH THEM.

THEY UNDERSTAND COLLECTIONS RECOVERY.

IT'S NOT JUST ABOUT CLEANING THE CARPET.

THESE GUYS UNDERSTAND THAT THIS -- THESE ARE COLLECTIONS THAT ARE REAR-REPLACEABLE THEY UNDERSTAND HOW TO HANDLE THEM. PLEASE, PLEASE IF YOU CAN LEAVE IT FOR THE PROFESSIONALS.

IF THAT IS NOT POSSIBLE, MAKE SURE YOU ONLY CLEAN ONCE THE MOLD HAS BEEN RENDERED INACTIVE SO THAT IS -- ONCE YOU'VE ISOLATED THE SPACE AND BASICALLY DRIED OUT THE SPACE.

ONCE YOU HAVE THE DEHUMIDIFIERS GOING YOU'VE GOTTEN THAT

RELATIVE HUMIDITY.
SO THAT THE MOLD CAN'T REPRODUCE
BECAUSE ENVIRONMENT ISN'T
CONDUCTIVE TO IT.
MOLD STAIN REMOVAL, IT'S LIKE
THE SNOWFLAKE FOXING I MENTIONED
YOU WANT TO LEAVE IT TO THE
PROFESSIONALS.
UNFORTUNATELY SOMETHING VERY
HARD TO DO, RESIDUAL COLORED
COMPONENTS THAT WILL OFTEN
REMAIN IN THE PAPER THAT'S PART
OF THE DIGESTIVE ENZYME PROCESS
THAT I MENTIONED WHEN MOLD IS
GROWING AND FEEDING.
IT SECRETES DIFFERENT COLORED
PIGMENTS SOME FOR OUR DEFENSE
MECHANISM TO HELP BLOCK LIGHT.
OTHER COLORS COME FORTH AS
INFLUENCE OF WHAT THE MOLD IS
INGEST CAN, OTHERS FROM
SURROUNDING ENVIRONMENT OR
INHERENT STRUCTURE TO THE MOLD.
ULTIMATELY GETTING IT OUT IS
TOUGH STUFF.
IF IT'S SOMETHING THAT'S DID
DEFACED TALK TO A PAPER
CONSERVATOR THEY WILL BE ABLE TO
HOPEFULLY HELP YOU.
LIKE MOLD REMOVAL ESPECIALLY THE
STAINING IS REALLY, REALLY
DIFFICULT.
AS PAPER CONSERVE FOR I CAN TELL
YOU THAT, IT IS A TRICKY THING.
SOMETHING THAT YOU MIGHT WANT TO
CONSIDER DEPENDING UPON WHAT
THESE OBJECTS ARE, I UNDERSTAND
THAT A LOT OF THINGS ARE SIMPLY
NOT REPLACEABLE, IF IT'S
SERIES -- SERIAL TITLE THAT IS
STILL IN PRINT YOU MIGHT
CONSIDER REPLACING IT INSTEAD OF
ACTUALLY TRYING TO FREEZE DRY
IT.
OFTENTIMES IT IS LESS COSTLY TO
REPLACE THE ITEM RATHER THAN
TRYING TO REMEDIATE THE MOLD

FROM IT.

SOME MORE PICTURES OF FOLKS
DOING SOME CLEANING.

THEY'RE USING HEPA FILTERED
VACUUMS TO CLEAN THESE BOOKS
HERE.

HEPA-FILTERED VACUUM.

ONCE THE MOLD IS INACTIVE YOU
CAN CLEAN IT OFF WITH COLLECTION
MATERIAL EITHER BY USING SOFT
BRUSH TO DIRECT THE MOLD IN TO
THE NOZZLE OR IT CAN BE VACUUMED
THROUGH A SCREEN IF IT'S
TEXTILE.

IN THE CASE.

PICTURE THAT YOU SAW PREVIOUSLY
BRUSH ATTACHMENTS TO THE BOOKS.
THEY WERE IN GOOD SHAPE THEY
WEREN'T DELICATE YOU CAN USE
THAT VACUUM BRUSH DIRECTLY ON
THE OBJECT IT WOULD BE OKAY.
IDEALLY IN A FUME HUED OR IN
NEGATIVE APRIL YOU CAN DO IT
OUTSIDE IF ITS NON-WINDY SUNNY
DAY TO REDUCE THE SPREAD OF MOLD
THROUGHOUT YOUR BUILDING.
WEAR YOUR PROTECTIVE PERSONAL
EQUIPMENT, PLEASE.

I CAN'T EMPHASIZE THAT ENOUGH.
HERE IS ME CLEANING MOLD OFF OF
A PAPER AT THE COLLECTIONS
RECOVERY CENTER WHICH IS IN
BROOKLYN, WE ACTUALLY -- AIC THE
AMERICAN INSTITUTE FOR
CONSERVATION PUT UP A RECOVERY
CENTER TO HELP ARTISTS IN THE
CITY WHO NEEDED ASSISTANCE WITH
RECOVERY FOR ASSESSMENT FOR
THEIR MATERIAL THAT WERE
AFFECTED BY HURRICANE SANDY.
WHAT I'M DOING I HAVE A SOFT
BRUSH THERE I'M BRUSHING THE
MOLD IN TO THE NOZZLE OF THE
HEPA FILTERED VACUUM WHICH IS ON
MY BACK.

I'M WEARING MY NITRILE GLOVES,
I'M WEARING THE N95 RESPIRATOR

AND LAB COAT I'M TAKING MANY
PRECAUTIONS.
IT'S IMPORTANT THAT YOU DO THAT.
I MENTIONED A SMOKE SPONGE.
THAT'S ALSO CALLED A GONE SO
SPONGE THERE'S A PICTURE,
VARIETY OF THING THEY CALL IT.
THEY CALL EIGHT PET HAIR
CLEANER, THIS ONE CALLS IT A
LAMP SHADE CLEANER.
THIS IS REALLY GOOD TO USE AFTER
VACUUMING IT'S AVILLE CAN IIZED
RUBBER THAT TRAPS THE MOLD AND
DIRT YOU CAN EASILY CUT IT UP
WITH SCISSORS AND USE PORTIONS
TO JUST CLEAN A LITTLE BIT.
LITTLE ISOLATED AREAS.
YOU WANT TO BE CAREFUL BECAUSE
IT ALSO CAN DRIVE MOLD IN TO
UNSIZE PAPER IF IT'S A COATED
PAPER REALLY GREAT TO USE IT
WITH THAT OR MORE SOLID SURFACE
THAT'S NOT REALLY HEAVILY POROUS
SURFACE THAT WORKS QUITE WELL.
I USE THAT ALL THE TIME FOR MOLD
REMOVAL, SOOT REMOVAL THAT SORT
OF THING.
AND THAT IS THE END.
I SEE YOU HAVE MANY, MANY, MANY
QUESTIONS.
KRISTEN, SHALL I GO ANSWER THEM?
>> SURE.
GO RIGHT IN TO THE QUESTIONS.
FOLKS, KEEP THEM COMING WE WILL
TRY TO GET TO THEM ALL.
>> I THOUGHT THERE WOULD BE
MANY QUESTIONS SO I WANTED TO
LEAVE GOOD AMOUNT OF TIME TO
ANSWER THEM.
EVERYONE'S MOLD SITUATION IS
DIFFERENT.
IF SOMEONE CAN SCOOT THE PARKING
LOT OVER A LITTLE BIT TO THE
LEFT TO SEE THE FULL QUESTION.
MY SCREEN MUST BE TINY.
WE'LL START AT THE TOP.
SOMEONE IN THE BAHAMAS I BET YOU

HAVE MOLD, POOR THINGS.

WE HAVE MOLD SITUATION WHERE BOOKS WERE CLEANED NOW IT HAS GROWN BACK ON THE BOOKS.

WE HAD A FLOODING SITUATION WHERE WATER WAS COMING DOWN FROM THE PILLARS UNDER THE FLOOR THE CARPET WAS REMOVED ENTIRE AREA WAS TILED.

THE MOLD HAS NOT STOPPED, WHAT ARE SOME OF THE THINGS WE CAN DO.

IT SOUNDS LIKE MAYBE NOT SEEING THE SPACE I'LL SORT OF TAKE MY BEST GUESS.

IT'S PROBABLY THE SPACE MAY NEED TO BE REALLY CLEANED WELL, PROBABLY IF YOU WANT TO CLEAN SHELVING WITH THE BLEACH SOLUTION, IF THERE'S AN AIR HANDLER IN THE SPACE IT MAY BE IN THE DUCT WORK THAT'S WHERE IT'S COMING FROM.

IF THAT IS NOT THE ISSUE YOU MAY NEED DEHUMIDIFIER OR SEVERAL.

WHAT I WOULD RECOMMEND SEE HOW HUMID, IT'S PROBABLY PRETTY HUMID IF YOU'RE IN THE BAHAMAS. YOU WANT TO DRY OUT THE SPACE, THAT IS GOING TO BE A NUMBER ONE THING.

IF YOU CAN GET AHOLD OF DEHUMIDIFIERS THAT CAN DRAW OUT A LOT OF WATER FROM YOUR AIR THAT MAY BE WHAT IS CAUSING THE PROBLEM.

DRY THE SPACE CLEAN THE SPACE. THOSE ARE THE TWO THINGS I THINK THAT NEED TO HAPPEN.

COULD BROWN SPOTS ON PHOTOS BE MOLD.

>> IT COULD BE.

ALSO COULD BE OXIDATION OR REDUCTION REACTION.

IT COULD BE CORROSIVE REACTION, IT'S IT'S HARD TO SAY.

THAT IS A TOUGH ONE TO ANSWER.

SOMETIMES IT CAN BE MOLD
SOMETIMES NOT.

LET ME TRY THE NEXT ONE.

IF THE ELECTRICAL HE CAN PENS OF
RUNNING DEHUMIDIFIER AND FANS IS
OUT OF THE BUDGET WHEN IS BEST
TIME TO HAVE THEM ON.

WHEN THE MUSEUM IS OPEN OR WHEN
IT'S CLOSED OVERNIGHT?

I THINK THIS WOULD BE DEPENDENT
UPON WHEN YOUR SPACE IS THE MOST
HUMID.

I DON'T KNOW WHAT KIND OF SPACE
YOU'RE IN, I DON'T KNOW WHETHER
SOME PLACE THAT'S OPEN TO THE
PUBLIC OR NOT.

I PROBABLY WOULD GET -- FIND OUT
WHAT THE RELATIVE HUMIDITY IN
THE SPACE IS OVER 24 HOUR PERIOD
AND YOUR DAMPEST PERIOD WHEN I
WOULD RUN THE DELIEU MID FIRES
AND AIR CIRCULATION.

WHAT YOU CAN DO -- IF YOU RUN
YOUR FANS 24-7 OR CHOOSE ONE
THAT HAVE LOWER ENERGY USE YOU
MIGHT BE ABLE TO CONVINC
ADMINISTRATION THAT YOU CAN RUN
THEM 24-7 BECAUSE IF YOU GET
THINGS THAT WILL USE UP LESS
ENERGY THAT MIGHT HELP.

DEHUMIDIFIERS THEY DO MAKE ONES
THAT ARE ENERGY STAR APPROVED SO
THEY ACTUALLY DO USE LESS
ELECTRICITY AND ENERGY.

I KNOW THOSE ARE PROBABLY MORE
EXPENSIVE.

YOU MIGHT WANT TO GO WITH THE
ANGLE OF, IT'S MORE COSTLY TO DO
MOLD REMEDIATION THAN IN THE
LONG RUN TO RUN DEHUMIDIFIER AND
FANS, YOU MIGHT TRY THAT ANGLE.

WE HAD BLACK MOLD OUTBREAK
INSIDE ONE OF OUR HISTORIC
STRUCTURES.

ONE CURATOR RECOMMEND SPRITZING
WITH SOLUTION OF BLEACH WALTER
AND DOING THIS SEVERAL TIMES

UNTIL THE MOLD DISAPPEARS.
THE MOLD IS ON -- I MEANT TO ASK
IF BLEACH SOLUTION WAS
ACCEPTABLE.

IT'S FINE IF YOU ARE GOING TO
CLEAN SHELVES BUT I WOULDN'T
SPRAY IT ON THE HOUSE ITSELF.
I PROBABLY WOULD CHECK TO SEE
ESPECIALLY IF IT'S BLACK MOLD,
GOODNESS.

I WOULD PROBABLY CALL IN
RESTORATION COMPANY, ONE OF THE
ONES I HAVE LISTED AND HAVE THEM
CHECK IT OUT BECAUSE WOULD BE
CONCERNED ABOUT PEOPLE'S HEALTH,
I WOULD BE CONCERNED ABOUT
HISTORIC STRUCTURE BECAUSE IF
IT'S HISTORIC STRUCTURE MOST
LIKELY IT'S WOOD.

WOOD CAN GET EAT ENBY MOLD SO I
WOULD HAVE SOMEONE TAKE LOOK AT
THAT FOR YOU.

I WOULDN'T USE A BLEACH
SOLUTION.

I JUST WOULDN'T GO IN THE
BUILDING ACTUALLY HOPEFULLY
THAT'S NOT BUILDING WITH PEOPLE
ARE ON STAFF BECAUSE I WOULD
WORRY ABOUT PEOPLE'S HEALTH TO
BE HONEST WITH YOU.

JUANITA, AT OUR LOCATION AT THE
AIR CONDITIONING IS SHUT DOWN --
THIS WHEN BUILDING IS CLOSED
OVER THE WEEKEND, WOULD THAN THE
BEST TIME TO BRING IN A
HUMIDIFIER?

YOU MEAN DEHUMIDIFIER MAYBE?

YES, THAT WOULD BE GOOD TIME TO
RUN THE DEHUMIDIFIER IF YOU'RE
IN A DAMP LOCATION BECAUSE AIR
CONDITIONING, ALBEIT DOESN'T DRY
OUT THE AIR COMPLETELY IT CAN
HELP WITH MOISTURE CONTENT IN
THE AIR.

I WOULD RUN DEHUMIDIFIER IF YOU
TURN OFF AIR CONDITIONING AT
NIGHT AND IT'S BETWEEN THE

MONTHS OF APRIL TO OCTOBER IN THE NORTHEAST OR IF YOU'RE IN THE SOUTH I'D DO IT ALL THE TIME.

BASICALLY IF IT'S SOMETHING WHERE YOU LIVE IN DAMP CLIMATE I'D DO THAT.

IS IT WORTH RUNNING DEHUMIDIFIERS THE DAY IF THE DOORS ARE CONTINUALLY OPEN. IF YOUR DOORS ARE LITERALLY WIDE OPEN, NO.

WHAT YOUR DEHUMIDIFIERS ARE DOING IS STRUGGLING TO DEHUE MID FILE THE OUTSIDE.

BEING OPEN AND CLOSED WITH PEOPLE COMING IN AND OUT MAY NOT BE A BAD THING.

NO, IT WOULDN'T BE EFFECTIVE. YOU ACTUALLY RUN THE RISK OF HAVING YOUR DEHUMIDIFIER BE FREEZING UP BECAUSE IT CAN'T KEEP UP WITH THE MOISTURE CONTENT.

DEPENDING WHAT YOU MEAN BY -- IF IT'S WIDE OPEN, NO.

IF IT'S OPEN INTERMITTENTLY IT SHOULD BE OKAY.

ONCE WE DISCOVERED MOLD ON CERTAIN OBJECT WHERE SHOULD I TREAT THE OBJECT GIVEN THAT IT IS PROBABLY NOT GOOD IDEA TO TREAT IT OVER NEAR OTHER OBJECTS.

YES, YOU'RE CORRECT.

DEPENDING ON THE OBJECT, WHAT YOU WANT TO DO IS ISOLATE IT FROM THE REST OF YOUR COLLECTION.

YOU'RE GOING TO NEED TO FIND SPACE WHERE THERE ARE NO OTHER COLLECTIONS ESSENTIALLY.

USE HEPA FILTER VACUUM AND CLEAN IT.

MAKE SURE THAT IT'S PUT IN A DRY SPACE SO THAT MOLD IS INACTIVE.

IF YOU ARE TRYING TO CLEAN UP

ACTIVE MOLD THAT'S NOT GOING TO
COME OFF IN -- WHEN IT'S
VACUUMED UNFORTUNATELY NOT VERY
WELL.

HOW DO YOU TREAT MOLD WHEN IT
LOOKS VERY WET.

IF THE MOLD IS WET THAT MEANS
IT'S ACTIVE.

WHAT YOU NEED TO DO BEFORE YOU
TREAT THE MOLD IS YOU NEED TO --
PUT IT IN SPACE WHERE IT WILL
DRY OUT.

YOU CAN ALSO DO THIS TRICK IF
YOU DON'T HAVE A SPACE THAT'S
DRY, IF THE OBJECT IS SMALL
ENOUGH YOU CAN DO DOUBLE-BAG
TRICK OR DOUBLE-CONTAINER TRICK.
IF IT'S SMALL GET TWO CONTAINERS
LIKE TUPPERWARE, ONE THAT IS
BIGGER THAN THE OTHER.

PUT A SILICA GEL, ARTZORB
ANYTHING THAT I MENTIONED DURING
THE ENVIRONMENT ALEC TOUGHER,
PUT IT AT THE BOTTOM OF THE
LARGE CONTAINER.

PUT YOUR OBJECT IN THE SMALLER
CONTAINER, SEAL IT UP.

THAT WILL DRY OUT YOUR OBJECT.

I DON'T EVEN KNOW HOW LONG YOU'D
HAVE TO WAIT.

I WOULD PROBABLY WAIT -- 24-48
HOURS MAYBE.

THAT MIGHT BE SUFFICIENT TO DRY
IT OUT.

TRY THAT IF YOU HAVE ONE OBJECT
AND SMALL ENOUGH TO PUT INSIDE
CONTAINER YOU CAN DO THAT.

THAT MY HELP DRY SOMETHING OUT.
THEN YOU CAN CLEAN IT WITH A
HEPA FILTERED VACUUM, MAKE SURE
YOU WEAR YOUR MASK AND GLOVES
AND THEN YOU'RE OKAY.

THEN CHECK SEE IF YOUR SPACE
NEEDS TO BE DRIED OUT WHERE IT
WAS ORIGINALLY STORED.

CAN FOXING SPREAD TO OTHER BOX
IN A A COLLECTION.

MY MAIN CONCERN RECEIVING GIFT BOOKS DECIDING WHETHER OR NOT THEY'RE SAFE TO ADD TO THE COLLECTION OR NOT.

FOXING ACTUALLY IS INHERENT TO THE PAPER NO, FOXING CAN'T SPREAD UNLIKE MOLD.

IT DOESN'T HAVE -- NOT SURFACE MOLD IT DOESN'T HAVE ACTIVE CONIDIA.

FOXING DOESN'T SPREAD.

FOXING ALSO CAN COME FROM RUSTY BITS OF METAL THAT WERE IN THE ORIGINAL WOOD PULP THERE IS VARIETY OF SOURCES FOR FOXING.

WILL UV FILTERS KILL MOLD?

LIKE THOSE FILTER -- --

FILTRATION UNION THAT'S RUN.

I ACTUALLY DON'T KNOW.

LIKE I SAID PREVIOUSLY SOME

UV -- OH.

THE THING ABOUT ULTRAVIOLET LIGHT IT KILLS SOME MOLDS NOT YOU A OF THEM.

I DON'T KNOW WHICH IT DOES AND WHICH IT DOESN'T UNFORTUNATELY.

THAT'S A GOOD QUESTION.

I ACTUALLY -- BECAUSE IT -- I DON'T KNOW WHICH IT KILLS AND WHICH IT DOESN'T YOU DON'T KNOW WHAT YOU HAVE IT'S GOING TO BE HARD -- HARD PRESSED TO SAY THAT IT WOULD.

YOU WOULD IMAGINE THAT UV FILTERS MAY BE IN FILTRATION SYSTEM PROBABLY MORE LIKELY THAN THOSE UV ONE, IS THAT THEY SELL IN THE MAGAZINES.

THOSE SEEM A LITTLE DODGEY TO ME.

I'M SORRY I'M NOT SURE I CAN REALLY ANSWER THAT.

I DON'T THINK I ANSWERED THAT VERY EFFECTIVELY.

I'D FEEL BETTER ABOUT UV FILTERS IN THE FILTRATION SYSTEMS.

HOW DOES SOURCE OF FOOD FOR

MOLD, WHAT IS IN THE DUST THAT THE MOLD LIKES TO EAT.

WELL NUMBER ONE THING IN DUST IS HUMAN SKIN CELLS.

THAT'S ACTUALLY A MATERIAL THEY'RE MORE THAN HAPPY TO EAT THAT.

OTHER SPORES, THERE'S OTHER -- SPORES FROM OTHER PLANTS, PLANT MATERIAL, ANYTHING THAT WOULD BE ORGANIC WOULD BE SOMETHING THAT IT WOULD LIKE TO EAT.

WOULD YOU RECOMMEND USING A HEPA FILTER VACUUM EVERY DAY FOR EVERY DAY CLEANING, YES, YES AND YES.

GOOD NEWS THEY SELL A LOT OF DIFFERENT HEPA FILTERED VACUUMS NOW, THEY'RE MUCH EASIER TO FIND.

CAN HEPA VACUUMS BE RENTED. I DON'T KNOW.

I CAN'T IMAGINE THAT THEY WOULDN'T BE.

I HAVE TO LOOK IN TO THAT I DON'T REALLY KNOW.

I KNOW YOU CAN DO LIKE WET-DRY VACS FROM HOME DEPOT BUT I DON'T KNOW.

THERE MAY BE SOME PLACES THAT YOU CAN.

SOMEONE MENTIONED PARTNERSHIP WITH OTHER MUSEUMS.

YES.

THAT'S ACTUALLY A GOOD REASON TO BE ON THE LIST TO SEE WHO ELSE TOOK THIS WORKSHOP BECAUSE, YEAH, YOU CAN POOL YOUR MONEY TOGETHER SHARE THINGS LIKE LIGHT METERS, HEPA FILTERED VACUUMS YOU CAN GET REALLY GREAT HEPA FILTERED VACUUMS THAT WILL THAT HAVE VARIANT SUCTIONS TO CLEAN THE COLLECTIONS AND THE FLOOR, THAT'S A BRILLIANT IDEA I RECOMMEND DOING THAT ABSOLUTELY. IS -- HOW DO I I.D -- IT COMES

IN DIFFERENT, MANY DIFFERENT STRAINS MANY DIFFERENT COLORS. SOME ARE ACTUALLY MORE HAZARDOUS TO PEOPLE'S HEALTH THAN OTHERS. ONLY WAY YOU CAN TRULY I.D. A MOLD THROUGH AIR QUALITY TESTING THROUGH PEOPLE WHO DO ENVIRONMENTAL HEALTH AND SAFETY KIND OF THINGS.

WHAT ABOUT MOLD ON VINYL RECORD AND CD RISKS?

SOMETIMES MOLD THAT YOU SEE ON VINYL RECORDS THAT ISN'T NECESSARILY MOLD, I'VE SEEN SOME OF THAT, BUT IF YOU FIND IT YOU CAN -- IF IT'S DUSTY INACTIVE YOU CAN CLEAN WITH HEPA FILTERED VACUUM.

SAME WITH CDs DIFFERENT WHEN YOU'RE CLEANING VINYL RECORDS VERSUS CLEANING CDs, VINYL RECORDS WHICH BY THE WAY YOU CAN WASH WITH SOAP AND WATER.

IF YOU'RE GOING TO JUST CLEAN THEM DRY YOU WANT TO TAKE YOUR HEPA FILTER VACUUM.

WHEN YOU CLEAN CDs YOU WANT TO CLEAN THEM IN RADIAL MOTION, DON'T CLEAN THEM IN A CIRCULAR MOTION.

CLEAN THEM FROM THE CENTER STRAIGHT DOWN LIKE YOU'RE MAKING PRAYS ON A SUNSHINE.

BECAUSE CDs AREN'T READ THAT WAY.

MAKE SURE DO BRUSH THAT ISN'T GOING TO BE REALLY -- THAT ISN'T REALLY ROUGH IT DOESN'T SCRATCH THE CD SURFACE.

SOUNDS LIKE DETECTING DEALING WITH MOLD ALL REQUIRES SUBSTANTIAL AMOUNT OF MONEY.

WHAT IF YOUR INSTITUTION HAS NO SUCH MONEY.

[Laughter]

OH, YEAH.

I DID FIND OUT ONE THING YOU CAN

DO -- I DON'T KNOW IF THE ASSESSMENT WILL BE HELPFUL. KRISTEN, ARE YOU THERE, IF MOLD IS A PROBLEM LIKE RESULT OF LIKE THE HURRICANE OR ANYTHING LIKE THAT, WOULD --

>> WE DO HAVE -- DID MAKE THE CONSERVATION ASSESSMENT PROGRAM AVAILABLE TO MUSEUMS THAT HAVE BEEN AFFECTED BY HURRICANE SANDY.

BUT THAT REALLY JUST BE TO FUND THE CONSERVATOR COMING IN TO LOOK AT YOUR SITUATION AND GIVE YOU RECOMMENDATION ON NEXT STEPS, WHETHER THAT IS IMMEDIATE NEXT STEPS SUCH AS GETTING RID OF MOLD OUTBREAK OR LONG TERM ONES ABOUT THINGS THAT ARE IN FREEZER STORAGE NEED TO BE DRIED OUT OR DAMAGE TO THE BUILDING BECAUSE OF FLOODING.

I THINK THAT IS VERY DIFFICULT QUESTION TO ANSWER ABOUT FUNDING BECAUSE A LOT OF -- WHAT YOU'RE TALKING ABOUT, TARA, YOU HAVE TO ACT QUICKLY.

I WOULD LOOK -- IF THIS IS AN ISSUE WHERE YOU REALLY WATCHING EVERY PENNY AND REALLY WORRY ABOUT THAT SORT OF THING, THIS IS THE KIND OF THING I'D LOOK IN TO WELL IN ADVANCE OF HAVING A PROBLEM.

WHETHER THAT BE TO TALK TO VENDOR -- IF YOU'RE IN HIGH FLOODING RISK AREA OR ISSUES IN YOUR BUILDING THAT MAKE YOU AT RISK FOR FLOODING.

MAKING SURE YOU HAVE VENDORS THAT YOU KNOW YOU CAN CALL, GENERALLY WHAT IT MIGHT COST TO USE THEIR SERVICES.

I THINK MAKING SURE THAT THOSE FUNDS WOULD BE AVAILABLE BECAUSE AS YOU SAY THIS IS A HEALTH RISK.

IT'S NOT SOMETHING YOU CAN JUST IGNORE.

TO MAKE SURE YOUR BOARD UNDERSTANDS THAT YOUR BUDGET IS SO TIGHT THAT YOU MIGHT NOT BE ABLE TO IGNORE HEALTH RISKS LIKE THIS YOU MIGHT HAVE TO CLOSE YOUR INSTITUTION TO THE PUBLIC AND STAFF IF THIS WERE TO HAPPEN.

THIS IS A WAKE UP CALL IF THIS IS -- WHETHER YOU'VE BEEN SCARED HOW YOU WOULD PAY FOR ALL THIS, I WOULD TAKE IT AS WAKE UP CALL AND OUR NEXT COURSE IN THE SERIES IS RISK ASSESSMENT.

THAT MIGHT BE A COURSE THAT WOULD HELP ALERT TO YOU FLOODING RISKS AT YOUR INSTITUTION.

>> THAT'S REALLY GOOD POINT.

>> A LOT OF THE FEDERAL FUNDING PROGRAMS COULD POTENTIALLY HELP YOU DO PLANNING, DO ASSESSMENT LIKE THIS BUT THEY'RE NOT REALLY AVAILABLE, UNLESS YOU HAVE HAD NATURAL DISASTER AND FEMA IS INVOLVED THERE ARE OPTIONSS AT THAT POINT IF THIS IS MATTER OF JUST SENDING OUT BECAUSE SOMEONE LEFT A WINDOW OPEN OR YOU HAD FLOOD IN YOUR BASEMENT BECAUSE OF BROKEN PIPE.

THERE IS NOT MANY EMERGENCY SOURCES.

MIGHT WANT TO OPEN CONVERSATION WITH STATE LIBRARY, STATE MUSEUM, HISTORICAL SOCIETY IF THEY HAVE ANY OUTREACH SERVICES THAT HELP INSTITUTIONS NEW JERSEY ALSO JUST TALK WITH YOUR COLLEAGUE, HAVE THEY DEALT WITH THIS BEFORE WHAT DOES IT COST. WHAT THINGS TO THINK ABUT.

>> I WOULD ENCOURAGE PEOPLE TO MAKE SURE THEY HAVE SUFFICIENT INSURANCE COVERAGE, THAT WOULD BE ONE WAY TO MAKE SURE THAT IN

CASE SOMETHING DOES HAPPEN THAT THERE WOULD BE POLICIES THAT WOULD BE ABLE TO COVER THE RECOVERY EFFORTS IF THERE WERE A MOLD OUTBREAK.

I DON'T KNOW HOW MUCH THOSE POLICIES COST I KNOW THEY COST MONEY AS WELL.

YOU HAVE TO HAVE PEOPLE UNDERSTAND THAT THIS IS SOMETHING THAT'S SERIOUS THAT THEY -- YOU CAN RISK CLOSING THE WHOLE INSTITUTION.

IT'S SOMETHING THAT PEOPLE NEED TO PAY ATTENTION TO.

WE'RE RUNNING LOW ON TIME I'M GOING TO TRY FINDS ONE THAT WERE QUICK ANSWERS.

>> I'M GOING TO DRAG OVER ONE BOX IF YOU HAVE BEEN WATCHING WITH COLLEAGUES TODAY JUST LET US KNOW WHO THEY ARE.

IF YOU ARE WATCHING BY YOURSELF YOU DON'T HAVE TO LET US KNOW.

THANKS FOR SAYING HI.

BUT WE HAVE YOUR INFORMATION AND WHEN YOU LOGGED IN WE DO -- WE HAVE COUNTED YOU, WE PROMISE.

BUT IF YOU HAVE BEEN WATCHING WITH OTHER FOLKS WE HAVE NOT COUNTED THEM.

>> ARE THE RESPIRATORS FOR USE ONE TIME ONLY SOMEONE ASKED? NO, YOU CAN USE -- SOMETHING THAT'S WICKED -- REALLY HORRIBLE MOLD OUTBREAK I WOULD -- I KNOW, RIGHT.

I WOULD THROW THAT AWAY REUSE IT AND USE A DIFFERENT ONE.

SOMETHING WHERE YOU'RE JUST CLEANING ONE ITEM IT'S NOT THAT BIG OF A MOLD OUTBREAK THEN I WOULDN'T WORRY ABOUT IT THEN YOU CAN USE IT AGAIN.

YES, TRACY, YOU CAN GET THE N95 MASK AT PLACES LIKE LOWE'S AND HOME DEPOT, I'VE SEEN THEM

THERE.

WASHING, APRONS OR DO YOU NEED TO THROW THEM AWAY?

>> YOU CAN ABSOLUTELY WASH THEM THAT WILL BE SUFFICIENT.

SHOULD ONE WEAR N95 CLEANING WORKING WITH ACTIVE MOLD, YES, ABSOLUTELY.

IF IT'S SOMEWHAT UNCOMFORTABLE WHEN YOU TAKE IT OFF AFTER YOU HAVE A BIT OF A MARK ON YOUR FACE.

THAT MEANT YOU HAD REALLY GOOD SEAL WHICH IS GOOD.

CAN YOU COVER UP MOLD STAINING WITH KILLZ?

>> YOU CAN COVER IT IT WON'T KILL THE MOLD IF THERE IS ACTIVE LEAK SOMEWHERE.

IS THERE ANY USE FOR OZONE GAS TO STOP MOLD GROWTH?

>> OZONE IS A REALLY DAMAGING MATERIAL.

DAMAGING POLLUTANT I MENTIONED IT IN MY LAST WEBINAR IT CAN EXPEDITE BREAK DOWN OF CELLULOSE AND RUBBER.

IT WOULD ONLY RUIN YOUR COLLECTIONS AND OTHER THINGS. IF YOU CAN'T AFFORD TO PAY FOR PROFESSIONAL TO CLEAN ITEM IS IT SUFFICIENT TO MAKE THE MOLD INACTIVE?

IT'S A GOOD START BUT THE PROBLEM IS INACTIVE MOLD ALSO CAN CAUSE ALLERGIES, CAN MAKE PEOPLE SICK IF PEOPLE ARE ACTUALLY SENSITIVE TO IT.

I DON'T RECOMMEND IT.

I RECOMMEND REMOVAL.

IT'S REALLY THE MOST IMPORTANT THING.

WHETHER IT IS ACTIVE, IN ACTIVE, GETTING IT OFF OF YOUR COLLECTIONS OUT OF YOUR SPACE IS THE MOST IMPORTANT THING.

JUST HAVE FEW ITEMS WITH ACTIVE

MOLD THAT CAME TO US THAT WAY,
CAN WE SEND THEM OUT TO BE
CLEANED OR DO IT OURSELVES?
OR DO WE NEED TO WORRY ABOUT THE
SPACE IF THEY HAVE BEEN
SEGREGATED THE WHOLE TIME.
YOU CAN SEND OUT FEW THINGS TO
BE CLEANED DEPENDING WHAT THEY
ARE.

DEPENDING ON THE SIZE WHEN YOU
SAY A FEW, I DON'T KNOW.
SOME PEOPLE -- SOME COMPANIES
RESTORATION COMPANIES LIKE ONES
I RECOMMENDED WILL DO A COUPLE.
SORT OF DEPENDS.
DOING IT YOURSELF, IF YOU'RE
ABLE TO USE THE PROPER
EQUIPMENT, PROTECT YOURSELF, IF
YOU KNOW IT'S INACTIVE, ACTUALLY
IN A DUSTY STATE, INACTIVE STATE
YOU KNOW YOU WON'T ACTUALLY
CONTAMINATE OTHER COLLECTIONS.
I GUESS THAT ANSWERS THAT
QUESTION.

THE SMELL OF MOLD.
TOO BAD YOU WEREN'T AT MY ODORS
SEMINAR.

IS THAT AVAILABLE, KRISTEN FOR
PEOPLE TO WATCH?

BECAUSE END OF THAT ACTUALLY
TELLS PEOPLE --

>> YEAH, IT SURE IS AVAILABLE.
I'LL PUT IT UP ON THE PAGE.

>> OKAY.

PEOPLE WHO WANT TO KNOW HOW TO
GET RID OF THE SMELL OF MILDEW
AND MOLD, THAT IS -- GO AHEAD
WATCH THAT BECAUSE THAT ACTUALLY
TELLS YOU A LOT ABOUT IT PLUS
ALSO WILL TELL YOU HOW TO GET
RID OF IT.

THE SMELL.

NEGATIVE APRIL.

WHAT THAT MEANS IS BASICALLY
THAT WHEN YOU WALK -- THAT THE
AIR COMING FROM THE SPACE THAT'S
CONTAMINATED ISN'T GOING TO

BE -- WHEN YOU OPEN -- OPEN THE ZIP TORE GET IN AND OUT ISN'T GOING TO BLOW OUT IN TO THE SPACE.

BASICALLY JUST THAT YOU WANT YOUR AIR TO BE IN THE SPACE WHERE THE COLLECTIONS ARE CONSTANTLY SUCKING.

WHAT THAT MEANS IS THAT THEY WILL HAVE SOMETHING CALLED AN AIR SCRUBBER ATTACHED TO THE CONTAINMENT AREA.

SO WHAT THAT DOES, IT DOES CREATE NEGATIVE APRIL.

IT CLEANS OUT THE AIR AND BLOWS IT OUT THE BACK OF THE CONTAINMENT AREA ESSENTIALLY.

THAT'S HOW YOU CREATE A NEGATIVE APRIL SPACE.

IF YOU ARE SETTING UP CONTAINMENT AREA WOULD YOU ASK PROFESSIONAL TO DO IT FOR YOU THEY WOULD CREATE THE NEGATIVE APRIL.

BLOWING THROUGHOUT THE SPACE.

HOW LONG DOES IT TAKE FOR ACTIVE MOLD TO BECOME INACTIVE?

I THINK IT WOULD DEPEND ON THE MOLD SPECIES.

MOSTLY YOU WILL RECOGNIZE WHEN IT ACTUALLY CHANGES ITS STATE, WHEN IT'S NOT THAT SQUISHY, SPONGEY MODE IT TURNS IN TO SOMETHING THAT'S MORE DUSTY AND POWDERY.

THEN YOU'LL KNOW THAT IT'S INACTIVE.

I DON'T ACTUALLY KNOW HOW LONG IT WOULD TAKE, I THINK IT WILL VARY GREATLY UPON THE MOLD SPECIES.

COULD YOU PLEASE EXPLAIN HOW MOLD CAN ATTACH IT TO A SUBSTRAIT AND DIFFERENT TYPES OF SURFACES THAT CAN CONSTITUTE A SUBSTRATE.

MOLD ATTACHES ITSELF TO A

SUBSTRAIT BECAUSE THE SUBSTRAIT IS A HOSPITAL -- HOSPITABLE ENVIRONMENT FOR IT.

MEANING IT'S DAMP ENOUGH, ENOUGH MOISTURE CONTENT IN THE SUBSTRAIT AND THERE IS A FOOD SOURCE WHICH IS MOST LIKELY THE SUBSTRAIT AND USUALLY ORGANIC MATERIAL.

THE DIFFERENT TYPES OF SURFACES THAT CONSTITUTE A SUBSTRAIT CAN BE ANYTHING THAT'S ORGANIC SURFACE OR THAT SURFACE THAT CONTAINS ORGANIC DUST, ORGANIC ELEMENT THAT CAN BE DUST AND POLLEN, ORGANIC FOOD SOURCE FOR THE MOLD.

THAT IS BASICALLY HOW IT WILL ATTACH ITSELF.

IT HAS TO BE THE RIGHT ENVIRONMENT, SUBSTRAIT THAT IS HOSPITABLE FOR MOLD GROWTH AND SUBSTRAIT HAS TO BE ORGANIC IN -- OR CONFEIGN OR HAVE SURFACE THAT HAS ORGANIC ELEMENT TO IT.

MOST OF THE TIME IT'S DUST. FREEZE DRY UNITS IN THE STATE OF OHIO I WOULD GO TO THE THREE RESTORATION COMPANIES THAT I RECOMMENDED.

THEY ACTUALLY ARE NATIONWIDE COMPANY SO THEY WOULD BE PLACES THAT THEY BE ABLE TO DO FREEZE DRYING FOR YOU CLOSE TO YOUR STATE.

HOW WOULD YOU SUGGEST GETTING MOLD REMOVAL -- GETTING STARTED WITH A MOLD REMOVAL PROJECT, IN ESSENCE WHAT WOULD TAKE PRIORITY.

YOU WANT TO -- BASICALLY GO THROUGH THE STEPS I MENTIONED, WANT TO ISOLATE YOUR SPACE AND PROTECT IT FROM THE REST OF THE COLLECTION THAT'S NUMBER ONE THING THAT SHOULD TAKE PRIORITY.

HOW MUCH LONGER CAN I GO,
KRISTEN?

>> I HAVE DISMISSED PEOPLE IF
THEY NEED TO GO.

BUT IF YOU DON'T MIND HANGING
OUT AND FINISHING BECAUSE --

>> WE GOT LOTS OF QUESTIONS.
I WANT TO MAKE SURE I TRY TO
ANSWER THEM ALL.

HOW WOULD YOU SUGGEST GETTING
MOLD -- I SAID THAT.

WHAT IS YOUR RECOMMENDATION FOR
MOLD UNDER TILE ON THE BASEMENT
FLOOR?

I WOULD RECOMMEND SEEING WHERE
THE MOISTURE PROBLEM IS COMING
FROM STOPPING THE MOISTURE FROM
COMING IN TO THE BASEMENT
UNDERNEATH THE TILE.

THAT WOULD PROBABLY BE FIRST
THING I WOULD INVESTIGATE.

CLEANING AN AREA WITH VINEGAR.
VINEGAR IS ACIDIC ACID WHICH IS
BASICALLY A MILD ACID IN THEORY
THAT COULD WORK.

BUT WOULD PROBABLY USE THE
SOLUTION, ONE CUP OF BLEACH TO
ONE GALLON OF WATER TO CLEAN
INSTEAD.

I'M LOSING THINGS.

ALCOHOL WIPES EFFECTIVE FOR
CLEANING AN AREA?

YES, THAT ACTUALLY WOULD BE --
IF YOU'RE TALKING ABOUT CLEANING
THE SURFACE OF -- I DON'T KNOW
IF YOU'RE TALKING ABOUT CLEANING
THE -- I DON'T KNOW IF YOU'RE
TALKING ABOUT CLEANING THE
SHELVES THAT SORT OF THING.

I PROBABLY WOULD STILL DO THE
BLEACH AND WATER IF YOU'RE
REALLY GOING TO CLEAN IT MAKE
SURE THAT THE MOLD IS ACTUALLY
GONE.

ARE ALCOHOL WIPES -- I SEE.

WHAT'S BEST CLEANING FLUID FOR
CLEANING MOLD ON BOOKS.

I WOULDN'T USE ANY SORT OF
CLEANING FLUID TO CLEAN MOLD ON
BOOKS ONLY BECAUSE YOU'RE GOING
TO DO MORE HARM THAN GOOD.

I WOULD RECOMMEND DRYING THEM
OUT AND I WOULD RECOMMEND
VACUUMING, CLEANING THE MOLD OFF
OF ONCE THE MOLD IS INACTIVE.

I WOULDN'T USE CLEANING FLUID.

IF YOU'RE GOING TO END UP
TREATMENT LIKE THAT I WOULD
RECOMMEND CONSERVATOR.

VODKA IS A CLEANING SOLUTION,
WHICH IS ESSENTIALLY ALCOHOL.

AGAIN, I WOULD PROBABLY JUST USE
BLEACH AND WATER.

HOW DO YOU CLEAN MOLD OFF
SURFACE OF PHOTOGRAPH CAN IT BE
WIPED WITH A SOFT CLOTH?

>> YES, YOU CAN DO THAT I
WOULDN'T USE THE -- DON'T USE
THE SOAP SPONGES BECAUSE THEY'RE
MADE OF RUBBER AND THAT SULFUR
THOSE ARE BAD FOR PHOTOGRAPHIC
MATERIALS.

IF YOU USE SOFT CLOTH THAT
SHOULD BE FINE PROVIDED IT'S
INACTIVE.

AGAIN, YOU WANT IT TO BE
INACTIVE.

YOU CAN ALSO USE VACUUM IF YOU
HAVE VARIABLE SUCTION OR USE THE
BRUSH TECHNIQUE WHERE YOU BRUSH
THE MOLD OFF AND BRUSH IT IN TO
THE VACUUM NOZZLE.

WHERE AM I.

HOW ABOUT ANTI-BACTERIAL WIPES
FOR SHELVING.

YES, DON'T DO IT ON THE ITEMS
THEMSELVES BUT THING ABOUT MOLD
IT'S NOT A BACTERIA, IT'S NOT
GOING TO KILL ANY -- IT WILL
KILL ANY BACTERIA THAT'S ON THE
SHELF BUT IT WON'T ACTUALLY KILL
THE MOLD.

AGAIN, BLEACH-WATER SOLUTION I
WOULD REALLY STRESS THAT.

IN DRY CLIMATES WE FIND MOLD ON
ON -- NOT SURE HOW TO MODIFY OUR
ENVIRONMENT.

ANYTHING ELSE TO DO TO DETER
GROWTH.

THAT ONE IS -- SEEMS LIKE I'M
WONDERING IF IT'S SOMETHING ELSE
NOT NECESSARILY MOLD.

IF IT'S OIL, IT MIGHT BE WHAT'S
CALLED SPEUE.

-- SPUE THAT LOOKS LIKE MOLD BUT
ISN'T IT IS SOMETHING THAT
CREEPS OUT OF THINGS -- SECRETES
OUT OF THINGS FROM OIL AND
WAXES.

IF IT'S THE RIGHT SORT OF
TEMPERATURE AND RELATIVE
HUMIDITY IT CAN COME OUT OF
MATERIALS THAT MAY BE WHAT
YOU'RE SEEING.

IT HAS WAXY FEEL TO IT, THAT'S
GROSS, THEN PROBABLY SPUE IT
WON'T HURT ANYTHING.

IT SOUNDS LIKE THAT MAKE MORE
SENSE THAN MOLD I THINK.

HEALTH CONCERNS FOR PEOPLE IN
HUNDRED YEAR OLD MUSTY BUILDING.

THAT'S A LITTLE BROADER THAN
PROBABLY I CAN TALK ABOUT.

THAT WOULD BE SOMETHING MORE FOR
AN ENVIRONMENTAL HEALTH AND
SAFETY PERSON RATHER THAN ME I'M
AFRAID I'M NOT SURE I COULD TALK
VERY MUCH ABOUT THAT.

HOW DO I MAINTAIN CLEAN UP A
COLLECTION IS DUSTING THE
EXTERIOR SUFFICIENT, YES.

THAT WOULD BE SUFFICIENT.

DOES IT PRESENT RISK FOR
SPREADING AROUND THE COLLECTION
AREA IF YOU USE A HEPA FILTERED
VACUUM SUCKING UP THE MATERIALS
THAT YOU'RE VACUUM UP IT SHOULD
BE FINE F. YOU'RE SENSITIVE TO
THIS SORT OF THING I WOULD
DEFINITELY WEAR N95 RESPIRATOR
NOT MAKING YOURSELF COUGH OR

TRIGGER ANY ALLERGIES OR
ANYTHING LIKE THAT.
MOLD GROWTH AT ROOM TEMPERATURE,
IN MY REFRIGERATOR, YES, IT
DOES.
BUT I'VE NEVER SEEN MOLD IN MY
FREEZER, NO.
AT WHAT MINIMUM TEMPERATURE DOES
THE GROWTH BEGIN.
THAT'S A GOOD QUESTION.
ALSO VARIANT DEPENDS UPON THE
MOLD.
SOME OF THE MOLD LIKE BLACK
BREAD MOLD WILL GROW IN
REFRIGERATED CONDITIONS.
BUT THERE'S OTHER MOLDS THAT
WON'T.
THAT ALSO WILL DEPEND ON THE
SPECIES I'M AFRAID.
DO AIR PURIFIERS WORK WELL TO
CLEAR AIR OF MOLD.
IT CAN, DEPENDING UPON THE AIR
PURIFIER YOU HAVE TO SEE HOW
WELL THE PURIFIER FILTRATES.
AT WHAT LEVEL THE AIR PURIFIER
DOES THE FILTRATION, ALSO WHAT
IT'S BASICALLY -- WHAT
SPECIFICATIONS ARE IN TERMS OF
HOW MUCH IT WILL FILTRATE OUT
WHAT THE MICROMETER IS.
HOW SMALL PARTICULATES THAT WILL
BE GOOD INDICATOR FOR IT CAN GO
DOWN TO THE MICRO METER LEVEL
THAT'S AN EXCELLENT AIR PURIFIER
TO CLEAN -- CLEAR THE AIR OF
MOLD SPORES.
DOES BOTH ACTIVE AND INACTIVE
MOLD APPEAR FLUORESCENT UNDER UV
LIGHT?
THAT'S GOOD QUESTION.
I DON'T KNOW.
ACTIVE DOES.
I DON'T KNOW IF ACTIVE DOES.
THAT WOULD HAVE TO BE -- I DON'T
KNOW.
I'M SORRY.
WHERE AM ANY WON'T UV LIGHT

INSIDE FILTERS DAMAGE
COLLECTIONS.

IT WOULD DEPEND ON -- WOULDN'T
HAVE UV LIGHT DIRECTLY ON THE
OBJECTS THEMSELVES.

IT'S THE UV LIGHT IS ENCLOSED
INSIDE THE FILTER IT
SHOULDN'T -- INSIDE THE
FILTRATION UNIT SHOULD BE OKAY.
OUR -- HEPA FILTER VACUUMS OKAY
FOR HOME?

YES, IT SHOULD BE FINE.

CAN YOU TAKE MOLD SAMPLE TO I'D
IF I LAB FOR IDENTIFICATION?

ABSOLUTELY, YOU CAN DO THAT.

WE HAVE LEATHER -- WOULD THE
LEATHER SADDLES HAVE MOLD?
THAT'S SPUE MOST LIKELY, THE
LEATHER SADDLES.

IF YOU -- I SEE OVER HERE
SOMEBODY SAID, MOLD AND BLOOM
FROM FATTY SPUE.

WE HAVE EXCELLENT -- I WONDER IF
THAT IS THE CARLY'S, I BET IT
IS.

IF YOU LOOK OVER IN THE Q&A
SECTION AMY RUSSELL PUT UP A
SITE ONE OF THE CONSERVATORS I
KNOW SCOTT AND HIS WIFE DO
OBJECTS CONSERVATION OUT IN
ALASKA.

I BET THAT'S THEIR WEBSITE.

YOU CAN TAKE LOOK SEE WHAT SPUE
LOOKS LIKE VERSUS MOLD.

THAT MIGHT BE HELPFUL FOR
PEOPLE.

IF YOU HAVE DEHUMIDIFIER RUNNING
, YOU HAVE WHITE MATERIAL
THAT IS FORMING ON LEATHER
SADDLES IT'S MOST LIKELY LEATHER
SPUE.

THAT'S COMING OUT ON TO YOUR
COLLECTIONS THAT WON'T HURT
THEM.

YOU CAN JUST WIPE IT AWAY IT
WILL -- IF IT COMES BACK IT'S
OKAY IT WON'T HURT THE LEATHER.

I THINK I ANSWERED -- DID I
ANSWER ALL THE QUESTIONS?

>> I THINK YOU DID.

CONGRATULATIONS.

YOUR VOICE HELD.

>> YEAH!

>> THANKS, EVERYONE.

THANK YOU SO MUCH TARA AS I
MENTIONED GREAT LINKS UP ON THE
WEBSITE WE'LL PUT ODORS ONE UP
THERE, TOO.

IF YOU HAVE GOT FURTHER
QUESTIONS SHOOT US AN E-MAIL WE
CAN GET THAT TO TARA OR YOU CAN
START A CONVERSATION ON
CONNECTING THE COLLECTIONS HOME
PAGE.

OTHERWISE WE WISH YOU A GREAT
WEEKEND IF YOU'RE IN THE PART OF
THE COUNTRY THAT MIGHT GET
WEATHER, GOOD LUCK WITH THAT.

WE WILL SEE YOU NEXT WEDNESDAY
AT 2:00 EASTERN AND WE'LL TALK
ABOUT STAFF AND VOLUNTEER
TRAINING.

THANKS EVERYBODY FOR YOUR
PARTICIPATION AND GREAT
QUESTIONS TODAY.

>> THANKS.

APPRECIATE IT.

THANKS EVERYONE.