

Winter Ecology -

PREVIOUS YEARS' INDIVIDUAL PROJECT PRESENTATIONS -

Projects by Topic -

- I. Winter Physical Processes**
- II. Microbial (Bacteria, Fungi, & Lichen) Winter Ecology**
- III. Vegetation Winter Processes**
- IV. Terrestrial Ecosystem and Landscape Processes in Winter (including Soil Respiration)**
- V. Arthropod Winter Ecology**
- VI. Aquatic Winter Ecology (including Lakes, Streams, Fish)**
- VII. Mammal Winter Ecology**
- VIII. Bird Winter Ecology**

Also search by Keywords

All project PowerPoints are on *Canvas*

I. Winter Physical Processes (also search: climate, snow, snowpack, snowpack metamorphism, soil, aspect, tree well)

Year	Presenter	Project [file access, size] <i>*=field project (required starting 2010)</i>	Keywords
2006	Jyh-How Huang	* Snow as a Conducting Media for Temperature. [ppt, 2M]	snowpack: temperature
2008	Derek Sweeney	* Impact of Recreational Snow Compaction on Small Mammals in the Subnivean Space [ppt, 5M]	snowpack: compression; human impact: skiing; mammal habitat
2009	Jason Blair	Avalanches: Disaster or Miracle? A Changing Ecological Effect [ppt, 1M]	snowpack: avalanche; vegetation biodiversity, habitat; climate change
2010	David Olson	* Influences of Stationary Objects on Winter Subnivean Micro-Environments [ppt, 1M]	snowpack: temperature, density; rocks, tree trunks
	Brittany Engleking	* Natural Snowpack vs. Human Disturbed Snowpack in the Subalpine [ppt, 3M]	snowpack: temperature, density; human impact: compression
	Garrett Porter	* Are we polluting the Ridge's precipitation? [ppt, 3M]	snowpack: chemistry, pH, electrical conductivity; atmospheric deposition
	Chris Giersch	* The Mountain Pine Beetle and Its Effects on Snowpack [ppt, 6M]	snowpack: temperature, density; canopy light exposure, forest health: mountain pine beetle kill
	Genesis Machek	* The Effects of Wind Exposure and Disturbance on the Insulative Value of the Subnivean Space [pptx, 100k]	snowpack: temperature, density, insulation; microclimate: wind exposure; human impact: compression
2011	Vivian Underhill	* Effects of Aspect on Faceting in the Rocky Mountain Snowpack [pptx, 1.5M]	snowpack: aspect; faceting, near-surface & depth hoar; diurnal radiation

	Sean Sutherland	* Short-term changes in snowpack due to weather [pptx, 4.5M]	snowpack: grain type, faceting, depth hoar; short-term (1 week) change, weather
2013	Andrew Benton	* Forest Floor Objects as Avalanche Triggers [ppt, 1M]	snowpack: avalanche, structure; rocks, tree trunks
2014	Dylan Brown	* The effect of trees on snowpack: live versus [beetle-kill] dead trees, pptx, live and dead tree influences on snowpack [pptx, 5M]	snowpack: stability, snow depth, slab, grain size; forest health: mountain pine beetle kill; subalpine forest: lodgepole pine
	Evan Esfahani	* Vegetation Density and Snow Accumulation [pptx, 1.2M]	snowpack: depth; tree / shrub density, canopy cover; vegetation: lodgepole pine, aspen, willow
	Jessica Walker	* Ash and its effect on Snowpack [pptx, 1.4M]	snowpack: depth, melt rate, albedo; ash, dust
	Sam Sartwell	* A snowpack comparison between a limber pine site and a spruce site within a spruce forest [pptx, 500k]	snowpack structure; vegetation: lodgepole pine, Englemann spruce, subalpine forest
2015	Alexandra (Allie) Cunningham	* Are the Snowpack Structures Different Between the Riparian and Upland Environments [pptx, 1.3M]	snowpack structure; vegetation: riparian, forest; Western Slope, Colorado
	Evan Franklin	* How do soil temperature fluctuations affect water content? [pptx, 100k]	soil properties: soil temperature, soil moisture; snow cover; lodgepole pine forest
2017	William Weaver	* Snow Compaction Variation Across a Subalpine Transect [pptx, 9M]	snowpack structure:
2019	Austin Nash	* Recreation and Snowpack Variety Contribute to Determine Trail and Subnivean Compaction in Lodgepole Forest [pptx, 5M]	recreation, snow, compaction, wildlife, impact
2023	Sarah Pierce	* Varying Snowpack Density and The PAR (Photosynthetically Active Radiation) [pptx, 5M]	

II. Microbial (Bacteria, Fungi, & Lichen) Winter Ecology (also search: respiration, microbial, disease, snow molds; see also Terrestrial Ecosystem and Landscape Processes in Winter)

2009	Ken Anderson	Ecological and Economical Impact of Snow Molds [ppt, 1.4M]	fungi: snowmolds
2011	Zack Schubert	* Distribution of Arboreal Lichens Relative to Snowpack [ppt, 1.5M]	lichen, height above/below snowpack surface; aspen, conifers
2013	Keli Baker	* Winter Controls on the Distribution of Arboreal Hair Lichens in the Niwot Ridge Biosphere Reserve [ppt, 1M]	lichen, arboreal; subalpine forest: Englemann spruce, subalpine fir
2016	Shane Schoolman	* Antibiotic Resistance in Snow and Melting Snow [pptx, 3M]	antibiotic resistant bacteria, bacteria in snow, pollution
2017	Anna-Elise Smith	* Lichen Growth in the Presence of a Road on Niwot Ridge [pptx, 6M]	lichen, arboreal; disturbance: roads; subalpine forest: Englemann spruce, subalpine fir
	Kelsey Bohanon	* Old Man's Beard Lichen (<i>Usnea</i>) size across its elevation range at Niwot Ridge, Colorado [pptx, 4M]	lichen, arboreal; elevation
2018	Johanne Albrigtsen	* Substrate Preference of <i>Usnea</i> , Dead vs. Living Branches of Trees [pptx, 11M]	<i>Usnea</i> , Forest Management, Forest Ecology
2019	Kaitlyn Barthell	* Antimicrobial Effectiveness of Old Man's Beard (<i>Usnea</i>) Lichen at Different Elevations Along Niwot Ridge Road [pptx, 16M]	Englemann Spruce, subalpine forest

III. Vegetation Winter Processes (also search: vegetation [especially in relation to snowpack], canopy, forest health, forest management)

2005	Charlie Morriss		Evergreens and Sunlight [ppt, 160K]	plant physiology: conifers
	Tim Moret		Riparian Zones in Winter [ppt, 3.2M]	vegetation: riparian; streams
	Arden Piland		Survival of Subnivean vs. Supranivean Plants: The Snow Buttercup and Engelmann Spruce [ppt, 1.2M]	plant adaptations: conifers, herbaceous plants; snowpack
	Tyler Bieneman		Lodgepole Pine / Ponderosa Pine Ecotone vs. Lodgepole Pine / Limber Pine Ecotone [ppt, 1.3M]	vegetation: montane, subalpine, conifers, ecotones
	Alan Rosacker		Stem Morphology for Quaking Aspen (<i>Populus tremuloides</i>) and Limber Pine (<i>Pinus flexilis</i>) [ppt, 4M]	plant morphology: conifers, deciduous trees
2006	Kyle Cunningham		A Winter Comparison Study of Dominant Alpine Plant Communities in the Southern Rocky Mountains and the Chugach Mountains of Southern Alaska. [ppt, 800k]	vegetation: alpine
	Kate Samelson		Winter Ecological Interactions between Alpine and Subalpine Ecosystems. [ppt, 1.3M]	vegetation: alpine, subalpine; landscape continuum
2008	Philip Neumann		The Impact of Lodgepole Pine Size on Heat-formed Tree Wells [ppt, 1.7M]	snowpack metamorphism: tree wells; conifers, forest canopy; microclimate: light
	Miles Daly		The Impact of Forest on Snowpack Stability [ppt, 500k]	snowpack: avalanches; forests
	Jason Ward		Hydrologic Change & Riparian Forests [ppt, 600k]	vegetation: riparian forests; surface hydrology
2009	Andrea Dixon		Effects of Snowpack on Plant Community [ppt, 1M]	vegetation: alpine; snowpack
	Brian Schleckser	*	What are the Effects of Exposure on the Treeline Ecosystem? [ppt, 8M]	vegetation: alpine / subalpine treeline; microclimate: wind exposure
2010	Jaclyn Ramaley	*	Foundation Conifer of the Subalpine Forest: Limber Pine / <i>Pinus flexilis</i> [pptx, 400k]	plant habitat: conifers; landscape position: snowcover, soil, slope
	Nick Ludolph		Human Suppression of Snow Avalanches and Vegetation Dynamics in the Subalpine Ecosystem [pptx, 5M]	snowpack: avalanches; vegetation: subalpine forests; human impacts: snow fences
	Michael Schuster	*	The Effect of Tree Density and Height on Tree-flagging of Lodgepole Pines in Niwot's Sub-alpine Forest [pptx, 2M]	vegetation: subalpine forests; forest structure, microclimate: canopy light
2011	Ryan Zubizarreta	*	Snow Depth Differences at 10,080 ft. under Limber Pine, Engelmann Spruce, and Aspen Trees [pptx, 2.4M]	vegetation: subalpine forest, tree canopy structure; snowpack: depth change with distance from trunk
	Justin Burman	*	Spatial Variability of Aspen Bark Chlorophyll Content In the Winter [ppt, 3M]	plant physiology: chlorophyll; aspect, trunk-face cardinal direction; aspen, bark color
2012	Leslie Seale	*	Moose Winter Diet and Heightened Vulnerability of Quaking Aspen to Fungal Cankers [pptx, 8M]	plant disease: fungi; quaking aspen; mammals: moose, behavior: foraging
	Lauren Kendle	*	Distance and Bark Photosynthesis in Aspen Trees in the Front Range [pptx, 1M]	plant physiology: chlorophyll; vegetation structure: tree spacing; microclimate: light
	J. Kalin Puent	*	Canopy Dynamics and Tree Well Size: Does the canopy height and size of coniferous trees affect the size of the tree well? [pptx, 8M]	snowpack metamorphism: tree wells; conifers, forest canopy

	Jane Culkin	* Effect of Tree Radiation and Snow Accumulation on Subnivean Plant Life [ppt, 4M]	plant community: subnivean; snowpack metamorphism; microclimate: radiation; vegetation: quaking aspen, meadow, tree radiation (can be related to tree wells)
	Corey Slinkard	* Lodgepole Pine Cone Density [pptx, 1.2M]	plant reproduction: cone distribution; vegetation: lodgepole pine; topography: slope aspect
	Chris White	* Variables Affecting Tree Well Formation (DBH, tree height, surrounding tree density, and tree species affect size of tree wells?) [pptx, 2M]	snowpack metamorphism: tree wells; forest structure: tree species, density, DBH, canopy
	Adam Albright	* Subalpine Fir: Snow, Age/size, and Bark Beetle Interactions [pptx, 2M]	forest health: insects, Western Balsam bark beetle; forest: conifer, subalpine fir; forest structure: tree age, tree size; snowpack: depth
2013	William (Max) Owens	* Impact of snow molds on conifers of the ribbon forest [pptx, 1M]	forest health, tree disease: snow mold, snowpack; ribbon forest: Engelmann spruce, subalpine fir
	Steven Griffin	* The Affects of Elevation on Tree Growth along Niwot Ridge [pptx, 1M]	forest structure: size classes; timberline, ribbon forest (Engelmann spruce, subalpine fir), upper montane forest (lodgepole?)
2014	Lizabeth Rodriguez	* How thickness of Chlorophyll in Aspen Bark is dependent on height and stand type [pptx, 4M]	aspen: bark chlorophyll; sunlight, tree height, snow; vegetation stand type: aspen (open), mixed (with conifer)
	Robin Reibold	* How do snowpack depth and proximity to trees affect subnivean plant growth [pptx, 600k]	vegetation: subnivean herbaceous layer; snowpack: depth; tree density and soil temperature
2015	Magali Weissgerber	* Tree wells: Comparison of coniferous and deciduous trees [pptx, 5M]	snowpack metamorphism: tree wells; forest structure: aspen, Engelmann spruce
	Meghan Montgomery	* Forest Canopy Influence on Snowpack Characteristics [pptx, 48M]	snowpack metamorphism: forest structure: tree canopy density; vegetation: lodgepole pine, subalpine fir, Englemann spruce; Brainard Lake
2016	Adam Clements	* Willow Carr Biomass vs. Stream Obstruction [pptx, 2M]	willow, riparian, elevation, beaver dam, moose, browse, graze, Como Creek, Caribou Creek, montane, subalpine
	Jason Farrell	* The Effects of Topography on Forest Cover in Subalpine Forest [pptx: 1.7 M]	vegetation: subalpine forest, tree density; topography: slope, aspect; snow depth
	Amanda Malone	* Testing Hepatic Sunlight Stress Response in in <i>Plagiochasma wrightii</i> [pptx: 1 M]	vegetation: shortgrass prairie, liverworts; sunlight exposure, desiccation
	Tyler Streb	* Does Chlorophyll (β) Absorbency Change with Orientation to Sun in Aspen Bark? [pptx: 7 M]	aspen: bark chlorophyll; topography: elevation; bark exposure: north versus south
2017	Charles Carner	* Comparing Formation of Krummholz: on the Mid-slope and Top-slope of Chalk Mountain [pptx: 12 M]	krummholz: slope aspect
	Hannah Reyes	* Aspen Age Effect on Winter Hardiness [ppt: 5 M]	aspen: bark chlorophyll

2018	Alex Sandberg-Bernard	* The Effects of Slope Aspect on Tree Density in the Subalpine Forest [pptx: 6 M]	tree density, subalpine forest, basal area, vegetation, aspect
2019	Juan Florez	* Variation of Chlorophyll Production in Boulder Creek Over an Elevation Gradient [pptx, 22M]	chlorophyll, elevation, light absorption, phytoplankton, primary production, Boulder Creek
	Margaret Watts	* Does forest thinning for wildfire management impact snowpack characteristics [pptx, 140k]	forest canopy cover, wildfire, snowpack layers, snowpack temperature, prescribed forest thinning, montane forest
	Nick Boyne	* The impact of aspect with respect to wind direction on the development of krummholz [pptx, 7M]	krummholz, aspect, wind, treeline, snow distribution, geomorphology, landscape position
2023	Ryan Hoak	* How does snag production differ in Limber Pine patches due to abiotic factors in subalpine-fir forest of the Rocky Mountains? [pptx, 19M]	Limber Pine, Snag density, Aspect, snag-avian ecology

IV. Terrestrial Ecosystem (Biogeochemical) and Landscape Processes in Winter (including Soil Microbial Respiration)

2009	Sara Fairchild	Winter and its Effects on Soil Respiration [ppt, 900k]	soil respiration: carbon sequestration, seasonal dependence
	Ryan Provencher	Nutrient Distribution in the Alpine and Subalpine Ecosystems of the Front Range [ppt, 3M]	biogeochemistry: nutrients; vegetation zones, landscape continuum
2010	Sara Crepinsek	* How CO ₂ Respiration Near the Mountain Research Station Relates to Climate Change [pptx, 2M]	soil respiration; snowpack: depth; carbon sequestration; climate change
	Justin D'Atri	* Winter Soil Respiration Near Dead and Living Lodgepole Pines at Niwot Ridge [ppt, 1M]	soil respiration; forest health: insects: mountain pine beetle kill; lodgepole forest
2011	Daniel Bradley	* Soil Carbon under the Snowpack in a Continuous Conifer Forest [pptx, 0.5M]	soil respiration: soil carbon, snowpack depth; lodgepole forest
2012	Maria Rocco	* Microbial Respiration in Soil Surrounding Aspen Trees [pptx, 1.1M]	soil respiration; quaking aspen
	Amanda Charobee	* Snow Pack in Fire Regimes (forest fires and prescribed burning affect the structure of the snowpack?) [pptx, 12M]	forest management: fire regime; snowpack metamorphism: vertical structure, profiles
2013	Andrew Carroll	* Bark Beetle's Affect on Winter Soil Respiration and Soil Moisture [pptx, 1.5M]	soil respiration, soil moisture; forest health: insects, mountain pine beetle kill
	Claire Hierseman	* The relationship between snow depth and soil respiration in upper montane winter environments [pptx, 3M]	soil respiration; snowpack: depth
	Margaret Vest	* Differences in soil respiration rates based on vegetation type [pptx, 0.2M]	soil respiration: vegetation type; aspen, lodgepole, Engelmann spruce; snowpack, ecosystem interactions
	Elizabeth Golden	* Subalpine soil microbial response to compaction of snow pack by snowmobiles [pptx, 0.5M]	soil respiration, microbes; snowpack: depth, compression; human impact: snowmobiles; subalpine forest
	Kenneth Eggering	* Spatial and Temporal Soil Respiration in the Subalpine [pptx, 1M]	soil respiration: diurnal variability, daily variability; upper montane forest: lodgepole pine
	Rob McFadzean	* What is the relationship between CO ₂ flux and altitude in the winter climate region of Niwot Ridge [pptx, 1.6M]	soil respiration: elevation; subalpine forest

	Ethan Larson	* Burning effects on soil temperature in subalpine environments [pptx, 2M]	soil temperature; forest management: fire regime; lower montane forest: ponderosa pine
2014	Colin Pettinati	* Affects of Varying Litter Types and Moisture on Soil pH under Snowpack [pptx, 8M]	soil pH; litter / vegetation: aspen, lodgepole, grass meadow; soil moisture under snowpack
	Scott Clingan	* The Influence of Vegetation Type on Winter Soil Respiration Rates [pptx, 700k]	soil respiration; vegetation: aspen, lodgepole, grass meadow
2015	Alexandra Haskell	* Human Impact on Winter Soil Respiration Rates. [pptx, 18M]	soil respiration; human impacts, disturbance: cabins
	David Block	* Amount of Winter Soil Respiration on a clear cut vs. “undisturbed” forests [pptx, 22M]	soil respiration; human impacts, disturbance: timber harvest, fire mitigation; montane forest: lodgepole pine
	Jake DePompolo	* Microbe activity comparison between north and south facing slopes [pptx, 8M]	soil respiration; aspect, sun exposure, organic matter
2017	Allen Dehoff & Jayleen Troutwin	* Soil Respiration Rates In Varying Environments [pptx, 20M]	soil respiration: snow cover, canopy cover
2018	Joe Persico	* Effects of forest composition on soil nutrient concentration [pptx, 8M]	soil, essential nutrients, forest composition
	Chloe Sommer	* Aspen Tree Well Influence on Microbial Respiration [ppt, 3M]	tree wells, microbial respiration, aspen
	Cloe Dickson	* Decomposition and development: A comparison of CO2 flux at Sourdough Trailhead [pptx, 4M]	decomposition, microbial respiration, CO2 flux, Sourdough Trailhead
	Tyler Piehl	* Effects of Canopy Cover on Soil Respiration in Sub-Alpine Aspen Stands [pptx, 20M]	Canopy Cover, CO2 Flux, Sudden Aspen Death
2019	Brian Kearney	* Needle Deposition and CO2 Flux with Proximity to Winter Lodgepole Pine stands on Lower Niwot Ridge [pptx, 2M]	Lodgepole Pine, litter, soil respiration
	Keara Harrington	* The Effect of Canopy Cover on Winter Soil Respiration [pptx, 53M]	Soil Respiration, CO2 Flux, Canopy Cover, Rainbow Lakes Trailhead, forest, willows
2023	Anya Sukiennicki	* The Impact of Clear-cutting Forest Management on Winter Soil Respiration [pptx, 16M]	
	Mark Cox	* How Does Soil Saturation affect microbial respiration [pptx, 17M]	

V. Arthropod Winter Ecology (also search: insects, arthropods, forest health)

2006	Jeff McClenahan	Winter Adaptations of the Leaf Litter and Soil Arthropod Collembola. [ppt, 1.1M]	soil / litter: arthropods
2008	Liz Manley	Examining Overwinter Cold-hardiness in Insects [ppt, 2.2M]	insect physiology
	Ashley Noonan	Alpine Glacial Melt: The Effects on Invertebrates of Alpine Aquatic Ecosystems [pdf, 12.5M]	aquatic: streams, arthropods
	Matthew McClure	Ice Streams and Invertebrates [ppt, 2.3M]	aquatic: streams, arthropods
2009	Andrew Habig	Winter Mortalities of the Mountain Pine Beetle [ppt, 500k]	forest health: insects: mountain pine beetle

2010	Carissa Fisher	* The Effects of Chemical and Physical Factors of Streams on Aquatic Invertebrates [pptx, 2M]	aquatic: stream morphology; chemistry: dissolved oxygen, pH, temperature, total organic carbon; invertebrates: biodiversity
2014	Amanda Tynan	* Winter Invertebrate Composition as a Function of Elevation [pptx, 4M]	tree bark arthropods: spider, moth larva, snow fly; community richness, diversity, and abundance; elevational gradient
2016	Daniel Ishmael	* Aquatic Macroinvertebrate Composition Over an Elevation Gradient [pptx, 2M]	aquatic: mayflies (Ephemeroptera) , stoneflies (Plecoptera), Oligochaeta; elevation; pollution; Boulder Creek
2017	Anna Eydinova	* Seasonal Aquatic Insect Populations in Lyons, CO [pptx, 1M]	
	Blake Curran	* Riparian zone influence on macroinvertebrate density in winter streams [pptx, 3M]	
2023	Matthew Yutzenka	* Effect of Snow Depth Upon Invertebrates [pptx, 70M]	

VI. Aquatic Winter Ecology (including Lakes, Streams, Fish) (also search: streams, aquatic, arthropods [see Section V])

2008	Lauren Pacheco	Cold Tolerant Fish in Alpine Streams [ppt, 300k]	aquatic: streams; fish: physiology; climate change
2012	Kristen Kernan	* Factors that Affect Productivity in Wintering Lakes: An Analysis of Lake Zones and Snow Depth [pptx, 500k]	aquatic: lakes; primary production; lake morphology
	John Motley	* Diurnal mixing in the water column... under ice: The movement of organic detritus through the water column over one day [pptx, 2M]	aquatic: lakes; organic particulate matter, algae; diurnal mixing
2014	Nick Herdeg	* From Source to Sink: Changes in Streamwater along the Front Range [pptx, 2M]	aquatic: stream / river water quality: air temperature, water temperature, dissolved oxygen saturation, pH, nitrate content, stream flow, water exposure, aquatic biota; elevation change: subalpine, high montane, urban, plains; Boulder Creek, Como Creek
2015	Nicholas Zaring	* Algae in Freshwater Winter Streams [pptx, 14M]	aquatic: attached algae, abundance, diatoms; stream speed; Como Creek
2019	Robert Holmes	* Autotroph Richness in Boulder Creek [pptx, 4M]	Species Richness, streamflow, terrain slope, light exposure, photosynthesis, riparian vegetation, Cottonwood
	Stephanie Pratt	* Acid levels in Colorado Lakes [pptx, 7M]	Precipitation, pH, limnology, lakes, suburban and urban lakes

VII. Mammal Winter Ecology (also search: mammals)

2005	Megan McCarthy	The Lynx and the Snowshoe Hare: Which Factors Cause the Cyclical Oscillations in the Population? [ppt, 900K]	mammals: snowshoe hare; population dynamics
	Chad Martens	Are Alpine Species Disappearing?: The Effects of Climate Change on Alpine Vertebrates in the Rocky Mountains. [ppt, 1M]	mammals: marmot, pika; birds: ptarmigan; climate change, vegetation change
	Sheryn Olson	Adaptations of Mustelinae to Winter, or: They Didn't Listen to Bergmann [ppt, 1M]	mammals: weasel

	Joanna Denninghoff	Ecological Influences of <i>Canis lupus arctos</i> and <i>Canis lupus</i> of Yellowstone National Park [ppt, 5M]	mammals: wolf
2006	Bobby Bennett	Hibernation of the Black and Brown Bear [ppt, 520K]	mammals: bear; hibernation
	Justina Thorsen	A Comparison of Abert Squirrels, Pine Squirrels and Fox Squirrels with Respect to Life in the Cold. [ppt, 4M]	mammals: squirrel
	Kelly Matheson	Seasonal Coat Color Distribution of <i>Mustela frenata</i> (Long-tailed Weasel) in North America [ppt, 830k]	mammals: weasel; seasonal pelage change
2008	David Rosengarten	Road Permeability Issues and Solutions for Ungulates [ppt, 2.7M]	mammals: elk, deer; migration, human impacts, highways
	Kevin Kohler	Effect of Winter Phases on Survival of Subnivean Mammals [ppt, 400k]	mammals: vole, weasel; mortality
2009	Taylor Loen	Implications of Beetle Killed Lodgepole Pine Effects on the Red Squirrel in Winter [ppt, 100k]	mammals: squirrel; conifers, mountain pine beetle kill
	Noel DiPaola	In What Way is Climate Change Affecting the Small Rodent Community? [ppt, 2.4M]	mammals: lemmings; climate change
2010	Melissa Pacheco	* Habitat Use of the Snowshoe Hare [pptx, 2M]	mammals: snowshoe hare; habitat: forest spatial structure
	Michael McHugh	* Comparing Moose Behaviors in Snowy Environments [ppt, 4M]	mammals: moose; behavior: habitat, foraging, movement, bedding; snowpack
2011	Erin Kinney	* Animal Activity and Tree Well Width [ppt, 2.3M]	mammals: behavior: movement, resting, tracks, snowpack: subnivean access, entrance holes; forest; snowpack metamorphism: tree wells
2012	Marieta Bialek	* Supranivean travel of snowshoe hares on Niwot Ridge [pptx, 8M]	mammals: snowshoe hares; behavior: movement; snowpack
	Brian Inglis	* Wintertime Mammal Activity – Specific Environmental Controls [ppt, 5M]	mammals: supranivean: cottontail rabbit, coyote, tree squirrel (pine squirrel), moose, weasel ; behavior: movement, tracks; topography: aspect; vegetation density
2013	Rachel Jones	* Forest composition and supranivean behavior of Pine Squirrels [pptx, 1M]	mammals: pine squirrel, behavior: movement, time budget, forest structure: tree density
	Paige Pruisner	* The Effects of Slope on Tree Well Shape and Sub-Nivean Access Points [pptx, 1.6M]	mammals: behavior: subnivean access, entrance holes; tree well shape, hill slope; lodgepole forest; snowpack metamorphism
	Patrick Ellsworth	* Subnivean Access in Forests of Varying Density [ppt, 2M]	mammals: behavior: subnivean access, entrance holes; forest structure: tree density; aspen, lodgepole forest
2014	Alyssa Countway	* Varying snow depths and the effect on moose movement [pptx, 3M]	mammals: moose; behavior: movement; snowpack
	Kristy Campbell	* The Effect of Elevation on Mammal Behavior and Abundance in Winter [pptx, 3M]	mammals: snowshoe hare, squirrel, coyote; body size vs elevation; riparian zone: Como Creek
	Kyle Poos-Benson	* Mammal activity in the sub-alpine urban-interface in relation to distance from settlement boundary [pptx, 3.5M]	mammals: Rabbits, Hairs, Squirrels, Skunk, Raccoon, Fox, Bobcat, Ungulate- Deer, Elk, Large Carnivore- Mountain Lion; wildland–urban interface: mountain town, roads; subalpine

	Matt Guyerson	* Effects of snow depth and snowshoe hare abundance on the distribution of coyotes in the Southern Rocky Mountain forests [pptx, 7M]	mammals: coyote, snowshoe hare; behavior: snow depth; high montane, subalpine
2015	Genevieve Gaffigan	* Red Squirrel Activity in the Sub-Alpine [pptx, 16.9 M]	mammals: red squirrel; lodgepole pine, forest, riparian, sub-alpine activity, food cache, tracks, sightings
	Kate Lonner	* What type of vegetation do moose prefer? [pptx, 5.4 M]	mammals: moose; vegetation: subalpine forest; habitat: aspen, willow, lodgepole; tracks
	Samantha Nelson	* Influence of Forest Canopy Cover on the Supranevian Movement of <i>Lepus americanus</i> at Niwot Ridge [pptx, 17M]	mammals: snowshoe hare, canopy percent cover, supranivean, movement, heterogeneous habitat
	Taylor Mendoza	* Moose Preference of Bark Chlorophyll Content. [pptx, 5M]	mammals: moose, feeding; aspen bark: color
2016	Bryan Horsley	* Trail Effects on the Abundance of Snowshoe Hare and Red Squirrel Along the Sourdough Trail [pptx, 9M]	mammals: snowshoe hare, red squirrel, human impact: proximity to trail; Sourdough trail; habitat: montane
	Megan Paliwoda	* Snowshoe Hare Behavior in Different Environments [pptx, 8M]	mammals: snowshoe hare; vegetation cover type: open vs closed; upper montane: willow, aspen, forest trees
2017	Liam Burke	* Trail Effects on Squirrel and Snow Shoe Hare Density [pptx, 3M]	snowshoe hare
	Miklos Eger	* Red Squirrel caching preferences [draft presentation: pptx, 100k]	
2018	Breanna Avery	* Influence on Canopy Cover on Behavioral Traits of Snowshoe Hare [pptx, 7M]	snowshoe hare, canopy cover, behavior, tracks
	Larkin Broussard	* Landscape Features Affecting Squirrel Cache Density and Location [pptx, 13M]	Tree Wells, Squirrel Caching
	Taylor Shreve	* Trail Type and Distance vs Mammal's Frequency of Use. Winter Ecology [pptx, 16M]	Trail Type, Distance from Trail, Mammal Frequency, Snowshoe Hare, Squirrel, Moose, Vole, Winter
2019	Cameron Brody Guisness	* Environment preference of Snowshoe Hares in the Ribbon Forest [pptx, 17M]	Snowshoe hare, habitat preference, ribbon forest, glades
	Kristen Plonsky	* Snowshoe Hares and Snow Compaction Resistance [pptx, 4M]	snowshoe hare, snow, compaction, mammals, aspen groves; energy in:energy out ratio
2023	Brenton Spendlove	* Snowshoe Hare Preference for Tree Cover Type Near Niwot Ridge MRS [pptx, 7M]	mammal, habitat, behavior
	Cece Benza	* Density of trees affecting foraging scraps (kitchens) of red squirrels [pptx, 11M]	
	Chris McCaffrey	* Do Mammals Act Preferentially Toward the Ribbon Forest or the Dominant Forest Structure? [pptx, 15M]	Snowshoe Hare, squirrel
	Eli Kanner	* Moose snowpack depth preference for movement in Niwot Ridge [pptx, 4M]	Moose; Movement; Snowpack
	Thoreau Alba	* Preferred paths of Snowshoe hare and Red Squirrel [pptx, 4M]	Red Squirrel, Snowshoe Hare, Tree Density, Canopy Cover.

VIII. Bird Winter Ecology

2005	Chad Martens		Are Alpine Species Disappearing?: The Effects of Climate Change on Alpine Vertebrates in the Rocky Mountains. [ppt, 1M]	birds: ptarmigan; mammals: marmot, pika; climate change, vegetation change
2010	John Rudolph	*	Winter Foraging Habits of Communal Flocking Birds [pptx, 1M]	birds: nuthatch, chickadee; niche separation: foraging behavior
	Shelley Nagata	*	Available Alpine Resources for the Insectivorous Golden-crowned Kinglet [pptx, 12M]	birds: kinglet; food resources: arboreal insect community
2012	Peter Dolan	*	Cavity Nest Preferences and Locations of Woodpeckers in Wild Basin, Rocky Mountain National Park [pptx, 2M]	birds: woodpeckers; nest preferences: tree species, aspect
	Mathew Sharples	*	Comparing Flight Abilities and other Behaviors of Crows with Wind Speed in a High-wind Winter Environment [ppt, 2M]	birds: crows; microclimate: wind
2015	Jennifer Meyers	*	Time Budgets in White-Tailed Ptarmigan [pptx, 25M]	birds: White-tailed Ptarmigans; time budgets: vigilance, foraging, behavior; alpine tundra; Guanella Pass, CO
2016	Alex Goldsmith	*	Foraging and Nesting Habits of Woodpeckers in a Subalpine Forest [pptx, 2.5M]	birds: Downy Woodpecker, Hairy Woodpecker; tree snags: DBH, height; subalpine forest: Engelmann spruce, subalpine fir
2017	Devan Pensinger	*	Recreation Effects on Winter Resident Bird Species in the Montane Region of Boulder County, CO [pptx, 1M]	birds: Diversity; Skiing, Recreation
2018	Roxanne Van Hove	*	Observed Winter Foraging Behavior of Sub-Alpine Birds Exposed to Calls of the Northern-Pygmy Owl (<i>Glaucidium gnoma</i>) [pptx, 4M]	
	Sy Baker	*	Wintering Bird Dominance Behaviors: Differences in Open versus Covered Sites at the Mountain Research Station [pptx, 16M]	birds, dominance behaviors, displacement, feeders
2023	Isabella Manning	*	Winter Invertebrate Feeding Resources for Tree Bark-Foraging Birds [pptx, 7M]	invertebrates, nuthatches, winter resident birds
	Bella Berube	*	Human Intervention on Chickadee Feeding Habits in the Subalpine Rocky Mountain Winter Ecosystem [pptx, 121M]	Black-Capped Chickadee, Mountain Chickadee, Bird Feeders, chickaree kitchens, pine squirrel

*=*field project*

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