



Wilson Ornithological Society 2023 Conference

Allentown, PA and Virtually

June 19-23, 2023

Program Cover Description

Our program cover depicts a typical Pennsylvania Dutch barn scene with the prominent stylized Kittatinny Ridge in the background. The Kittatinny Ridge is the last major ridge in the ridge and valley topography that stretches east to west across Pennsylvania. It is the northern border of the Lehigh Valley where we are gathering for our meeting. The stone barn depicts our WOS and annual meeting logos on its walls. The evergreen tree is our state tree, the Eastern Hemlock. The hex sign including the Distelfink, American Goldfinch, is perched on the Pennsylvania state flower, the Mountain Laurel. The Broad-winged Hawk is shown in a kettle, a typical swirling thermos-rising group regularly occurring at prominent hawk watches along the Kittatinny and other ridges across the eastern U.S. Three of these prominent local hawk watching sites are shown northeast to southwest: Bake Oven Knob, Baer Rocks, and the internationally renowned Hawk Mountain. This program cover is the creative work of Cheyenne Friscia, a biology major studying at nearby Kutztown University. She studies ornithology under the guidance of WOS member and Kutztown University Biology Professor Todd Underwood.

Logo Description

The 2023 Wilson Ornithological Society (WOS) 104th Annual Meeting logo depicts a Pennsylvania Dutch hex sign. It features a Distelfink, American Goldfinch, perched on the state flower, Mountain Laurel. The Pennsylvania Dutch were German-speaking immigrants seeking religious and cultural freedom in William Penn's Pennsylvania in the 17th and 18th centuries. Hex signs are folk art related to *fraktar*, and began to appear on barns in southeastern Pennsylvania in the early 1800s. They are thought to provide protection from evil, fertility for livestock, and good growth for crops. Hex signs are highly variable and creative, depicting a range of symbols, real or imagined, such as stars, birds, and flowers. Our logo is created by Cheyenne Friscia, a biology major studying at nearby Kutztown University. She studies ornithology under the guidance of WOS member and Kutztown University Biology Professor Todd Underwood.

Wilson Ornithological Society



*104th Meeting, 2023
Muhlenberg College, Allentown, PA*

Land Acknowledgement

The 2023 Wilson Ornithological Society Conference this week takes place on the traditional, unceded homelands of several Lenape Tribal Nations, including the Delaware Nation, the Delaware Tribe of Indians, the Stockbridge Munsee Community, the Munsee-Delaware Nation and the Delaware Nation of Moraviantown. The forced removal of the Lenape from their homelands began after the fraudulent Walking Purchase of 1737, and continued through the 1778 Treaty of Fort Pitt which was the first treaty signed by the new US and a native nation, and it was also the first treaty broken by the United States. We as the participants of this conference and members of Wilson Ornithological Society recognize that the harms of genocide and colonization on the Lenape and many indigenous nations are ongoing and know it is our responsibility to work against this ongoing harm and erasure. This acknowledgment only becomes meaningful when combined with accountable relationships and informed actions. It is only a first step. We respect the right to Indigenous sovereignty and self-determination and are committed to uplifting Indigenous voices while being better listeners, learners, and partners. We as members of the ornithological and avian conservation community need to examine our own work and our collective work to do better today and in the future.

Covid Policy

The WOS is requiring masks for all in-person conference participants at WOS 2023 to ensure that the meeting is as safe and accessible for everyone as possible. Masks will be required in all indoor spaces, including while presenting. A microphone will be provided for everyone to use when presenting.

Three N95 masks will be provided to each participant at registration, along with three rapid tests. We request that everyone test each morning. We also ask that everyone test prior to traveling to the meeting. We will fully refund registration and on-campus housing costs through the end of the meeting for anyone who needs to cancel due to illness (COVID or other). We are also glad to change someone's registration from in-person to virtual due to illness and reimburse the difference.

Outdoor areas will be available for those to eat their meals outside. We will be building cossi-boxes and those will be set up in each session room and anywhere that indoor eating may occur.

We will present our awards ceremony prior to the banquet so that everyone can participate while masked, and those who don't wish to be around others unmasked can then leave before the banquet.

Social Media Policy

WOS 2023 is a pro-social media event; we actively encourage the sharing of conference content. Sharing ornithological science with the public via social media is one way to educate the public, which can only help the support of the science and its application.

WOS 2023 presenters are encouraged to include personal and/or project social media handles and project hashtags on slides (at least the opening/title slide, but recommended to use on all slides) and posters. For those without personal/project handles or hashtags, consider including the **conference hashtag** (#WOS2023) or a **social media icon** on slides to let people know you are supportive of them posting about your work on social media.

WOS 2023 presenters must **opt out** if they do not want their presentation or research to be featured in social media posts: this is best achieved by placing a “**no social media**” symbol on slides or materials. If presenters do not opt out in this manner, conference organizers and/or attendees can share published research presented at the conference without consent.

Please give credit to presenters/researchers whose presentation and/or research are featured in your post.

Anyone may participate in conversations on WOS 2023’s social media channels, but:

- The WOS has the right to delete posts or comments containing spam, irrelevant remarks, or items that do not align with the mission/integrity of the WOS.
- Personal attacks, promotion of violence or illegal activities, offensive material, or profanity will be deleted.
- The WOS reserves the right to ban users who violate this policy.

Conference attendees are expected to abide by the [meeting code of conduct](#), and all those engaging on social media are asked to maintain **respect, courtesy, inclusivity, and support** in their conduct to ensure a safe, hospitable, and productive environment for all. Discrimination, harassment, and/or retaliation will not be tolerated.

Additionally, it is **recommended** that presenters and those sharing on social media be mindful of how photos of birds (and other animals), especially birds in the hand, may appear to the public: are safe and taxonomically appropriate grips being used? Does the bird appear in any way to be stressed, disheveled, or in an unnatural position? Is it a “trophy shot” (prolonging handling time), or was it taken during banding and provides educational material such as molt? For further suggestions on sharing photos of birds in the hand, see the guidelines written by the North American Banding Council at <http://www.nabanding.net/photographic-guidelines/>.

Code of Conduct

This Code of Conduct is intended to set clear expectations of behavior of participants at all WOS events to ensure that all feel safe and welcome. The Wilson Ornithological Society welcomes everyone. We are dedicated to providing an inclusive environment that is collaborative, supportive, and engaging for everyone involved, and that is free of discrimination, harassment, and retaliation. We expect everyone to help in our mission by being respectful and considerate of each other, providing supportive critique, and embracing the multitude of opinions that are on offer.

WOS events (virtual and in person) are intended to foster the open and honest communication of ornithological science and to promote equality of opportunity and treatment for all participants. Effective communication requires that we be courteous in our interactions and that we respect the intellectual property of our colleagues. We represent the field of ornithology and avian conservation, and it is imperative that we behave as professionals toward all participants, staff, and vendors. All forms of communication among participants during WOS events are considered within the scope of the event and thus fall under the jurisdiction of the Code of Conduct. These include public and private communications in virtual conference rooms, via electronic chat functions (e.g., Q/A box, Zoom Chat), emails, texts (including via platforms such as Signal, Slack, and Whatsapp), social media, phone calls, and other forms of written, verbal, and non-verbal (including visual) communication. In addition, communication, as described above, that occurs after a WOS event but that pertains to content from the event and/or where contact information of a participant was procured during the event may also fall under the purview of this Code of Conduct.

Harassment between participants will not be tolerated in any form. Harassment includes any communication or behavior towards another participant that involves offensive gestures, verbal and written comments, posts on the internet and social media, deliberate intimidation, stalking, harassing photography or recording, sustained disruption of talks or other events, inappropriate physical or electronic contact, microaggressions, and unwelcome attention. It is possible to engage in harassment without the intention of doing so. Participants asked to stop any harassing behavior by anyone are expected to comply immediately, regardless of their intent.

Bad faith reporting under the Code of Conduct will be considered itself a violation of the Code of Conduct. Bad faith reporting is defined as intentionally false and/or malicious reporting of code of conduct violations against another attendee.

Individuals who are currently sanctioned for sexual assault or harassment by an adjudicating institution (e.g., a university or professional society) should not participate in WOS events and could have their meeting participation revoked.

Any individual covered by this policy who believes that they have been subjected to harassment, notices that someone else is being harassed, or has any other concerns that an individual's behavior interferes with the intent of the conference should report the incident immediately.

We ask that individuals report breaches of this Code by emailing WOS.COC.Reports@gmail.com. The person reporting, who may be a complainant or witness, is not required or expected to discuss the concern with the alleged offender. All complaints will be treated seriously and reviewed promptly and may be investigated. Confidentiality concerning the person harassed and others made uncomfortable by the harassment will be prioritized, and actions may be taken to maintain their safety and comfort.

The committee that will review CoC breach reports consists of WOS officers Tim O'Connell, Lindsey Walters, Meg Hatch, and Jim Chace.

Individuals found to have engaged in behavior prohibited by this policy, as well as those making allegations of a breach of the Code in bad faith, will be subject to disciplinary action. The WOS Executive Committee may take any action they deem appropriate, including a verbal warning, ejection/prohibition from the specific activity in question (e.g., workshop, symposia or even the entire conference), banning them from future WOS conferences or partner society conferences, revoking membership in the Society, and /or to the reporting of their behavior to their employer and research funders.

The WOS will not tolerate any form of retaliation – including seeking to violate the confidentiality of a reporting individual – against individuals who file a complaint or assist in an investigation, nor any individuals suspected of doing so. Retaliation is a serious violation of this policy and, like any breach of the Code itself, will be subject to disciplinary action.

Any questions regarding this policy should be directed to Auriel Fournier (auriel@illinois.edu), WOS 2023 Scientific Program Chair. In the event that an individual involved in any reported incident is dissatisfied with the disciplinary action, they may appeal to the WOS Executive Committee by emailing WOS President Tim O'Connell (tim.oconnell@okstate.edu).

OVERVIEW

		Tuesday June 20, 2023	Wednesday June 21, 2023	Thursday June 22, 2023	Friday Jun 23, 2023
		Travel Day	6-830 2 field trips	6-830 2 field trips	
8			Breakfast (included with registration)	Breakfast (included with registration)	
9			Welcome and Nice Plenary		
10				Alexander Wilson, how do we tell his story and celebrate him as the professional society that bears his name?	
11			Concurrent Sessions		
12			Lunch (included with registration) & Business Meeting	Lunch (included with registration) & Student Mentor Lunch	
1					
2				Hawk Mountain Symposium	
3			Workshop		
4				Concurrent Sessions	
5				Concurrent Sessions	
5	1 Field trip 4-6		Registration Opens	Meet the Editor of WJO	
6			Break	Awards Ceremony	
7-9		Welcome Reception	Poster Session	Banquet (Ticket included in student registration, not included in regular registration)	

Wednesday June 21			
6	2 morning field trips (separate sign up required at registration)		
8	Breakfast (included with registration)		
9			
	Welcome and Margaret Morse Nice Plenary by Dr Scott Edwards		
	Room A	Room B	Room C
10-1030	BREAK		
1030	The Impact of Lights Out Campaigns on Artificial Light at Night and Migratory Bird Fatalities - Grace Trankina	Waterbirds species richness and abundance at Bontanga Irrigation Dam - Abdul-Rakib Osman	Local geographic variation in gray catbird song pattern and repertoire - Elliot Lee
1045	Flight altitudes of arriving spring migrants in the Gulf of Mexico region - Virginia Halterman	Effects of Surgically-Implanted GPS/GSM Transmitters with Percutaneous Antennas on Captive Lesser Scaup Behavior and Breeding - Cheyenne Beach	Don't Underestimate Her: Conservation Impacts of Female Song in the Puerto Rican Oriole - Michelle Moyer
11	Occasional Fall Movements of Tufted Titmice in the Mid-Atlantic Region - Paul Heveran	Surveilling resident Illinois Canada Geese for Campylobacter jejuni, Escherichia coli, Salmonella enterica, and Staphylococcus aureus - Nicole Pietrunti	
1115	Stopover hotspots and full annual cycle conservation of migratory landbirds in the eastern U.S. - Fengyi Guo	NOAA Firebird: Fire Effects in Gulf of Mexico Marshes on Mottled Ducks, Black and Yellow Rails - Auriel Fournier	The effects of temperature on the vocal performance of male Seaside Sparrows - Mackenzie Roeder
1130	Migratory strategy and population differences at MHC class I and neutral markers in two seasonally-sympatric subspecies of Dark-eyed Juncos - Esther Fernandez	Evaluating the Spring Migratory Behavior of Sora and Virginia Rail in Central Illinois using the Motus Tracking Network - Chad Cremer	Using Autonomous Recordings to Study Occupancy and Reproductive Success of An Elusive Forest Raptor - Natia Javakhishvili
1145	Avian Community Response to Coastal Prairie Restoration Using Herbicide and Prescribed Fire on the Welder Wildlife Refuge Over a Seven Year Time Frame - Derek Malone	Slope direction, elevation and clutch size influences breeding success of White-crested Kalij Pheasant in Margalla Hills National Park - Ali Akhter	Using Referential Alarm Calls to Investigate Mental Time Travel in Free-living Songbirds - Karla V. Kelly
12-130	Lunch (included with registration) & Business Meeting [LOCATION TBD]		

Wednesday June 21 Part 2

	Room A	Room B	Room C
130	Good News from a Caribbean Island Endemic: Downlisting the Puerto Rican Oriole from Critically Endangered to Endangered - Kevin Omland	Workload inequality increases with group size in a cooperatively breeding bird - Maria Smith	Female-specific plumage color as a signal of mate quality, competitive ability, and stress resilience in the sexually dichromatic black-throated blue warbler - Lezhi Hao
145		Individual optimization of reproductive investment and the cost of incubation in a wild songbird - Kelly Miller	Climatic adaptation and sexual selection contribute to heterogeneous diversification across an order of colorful birds - Jon Treadwell Merwin
2	How do we account for uncertain outcomes of bird-window collisions? - Brendon Samuels	Brood Parasite Rejection Behavior in Prothonotary Warblers - Rin Pell	Community engaged learning in conservation with local ornithological organizations - Jameson Chace
215	Mapping cumulative risks to small birds in flight across the contiguous United States - Brittany Simons	Egg fertilization as an influence on investigation of hatching success and nestling sex ratio in hybridizing chickadees - Carlos Garriga	Impacts of plantation forestry of birch <i>Betula alnoides</i> on the interaction networks of mixed-species flocks in southwestern China - Wenyi Zhou
230-330	Break		

Wednesday June 21 Part 3

	Room A	Room B	Room C	
330	The influence of avian species interactions on distributions - Madison Sutton	Habitat Restoration of Pinyon-Juniper Woodlands and Its Impact on Avian Communities in New Mexico - Ariana Rivera	Campus bird-window collisions at a Chicago-region lakefront campus - Annette Prince	
345	Dominance interactions in a mixed parid flock along the chickadee hybrid zone - Margaret Boyle	Use of urban habitats by Clay-colored Thrushes and Green Jays in South Texas - Timothy Brush	Bird-window collisions in Costa Rica: data collected by citizen science during 2013-2023 - Rose Marie Menacho Odio	
4	Post-breeding Ecology in the Prothonotary Warbler: Evaluating potential trade-offs between breeding, molt, and migration phenology - Brian Tsuru	Before-and-after evidence that urbanization contributes to the decline of a migratory songbird - Karl Heide	<p>BMOC (Bird Mortality On Campus): Scope and Solutions</p> <p>The Yale Bird Friendly Building Initiative - Viveca Morris</p> <p>BirdSafe Bowdoin: Window Strike Surveys and Progress Towards Bird-Friendly Design on a College Campus - Brandon Tate</p> <p>Light matters to birds, and birds matter to humans - James Fischer</p> <p>An introduction to FLAP Canada's Bird-Safe Campus initiative - Michael Mesure</p>	
415	Genetic differences among barn swallow populations breeding in North America - Thilini Thakshila	Habitat selection and movement patterns of the Stone Partridge in a fire-altered tropical savannah - Nguvan Agaigbe		
430	Population Density of Black Francolin in Kala Chitta Range, Pakistan - Nadeem Munawar	Plumage Characteristics of the Long-eared Owl in the Visible and Ultraviolet Spectrums of Light - Emily Griffith		
445	Relationship Between Habitat Quality and Biodiversity in an Urban Floodplain Ecosystem - Hanah Carter			
5	Break			
6-8	Poster Session (included with registration, Food provided) [LOCATION] and Get Involved with WOS Fair			

Wednesday Night Posters

Poster Number	Authors	Title
1	Philémon D; Samadori B; Eméline A; Hippolyte A	Distribution and feeding behavior of birds in birds in the agricultural landscapes of Adjohoun in southern Benin
2	Ashley Denney; Lindsey Walters	Who does more diaper duty? Comparison of fecal sac removal rates of male and female Tree Swallows
3	Megan Bunnenberg; Lindsey Walters	Evidence of conditional cooperation in Eastern Bluebird parental care
4	Anna McElhinny; David A. Luther; Shawn H. Smith	Effects of Anthropogenic Noise on Vocal Communications of Three Migratory Bird Species in Bolivia
5	Erin Heddy; Luke K. Butler	Seasonal and Site-Based Variation in Wintering Water-Bird Populations of the Lower Delaware River
6	Keith Clayton; Gregory George	Avian Nest Predation and the Impacts of Freshwater Ecosystems.
7	Caoimhe Edmark, Dr. Brittany Coppinger, Dr. Robert Curry	Call structure variation in Carolina chickadees and black-capped chickadees as a function of ancestry: an experimental approach
8	Frank J. Rauscher IV; Brittany A. Coppinger; Robert L. Curry	Hybridization trajectory and relict recognition of song in the chickadee hybrid zone: an experimental approach
9	Mahmoud Alhaddad; Cailin O'Connor	Quantifying Avian Window Strike Mortality in an Exurban Area Dominated by Mirrored Glass Buildings
10	Tegan Tanner; Briana Morin; Jameson F. Chace	Wintering sea duck and associated waterfowl abundance and distribution in Newport, RI
11	Sarah E. Holcomb; Jameson F. Chace	Ten Years of Bird Banding at a Migratory Stopover Site in Middletown, Rhode Island
12	Victoria Sanberg; David Colucci; Dr. Anne Clark	Structural variation among American crow feather types is consistent with aerodynamic models
13	Gabriella von Beren; Sophie Beauchesne; Richard van Winkle; Julia Abbott; Jameson F. Chace	Breeding Songbirds in Refugia on an Uninhabited Island in Narragansett Bay
14	Shannon M Kitchen; Jennifer L Mortensen	Strength in unity?: fitness tradeoffs in the winter roosting behaviors of eastern bluebirds
15	Cailin O'Connor	Determining the effects of traumatic brain injury from window strikes on migration in passerines using Motus
16	Michael Ocasio; Moyer; Morales-Pérez; Molake; Bare; Moreland; Osorio; Omland	Exploring the Population Dynamics of the Puerto Rican Oriole

17	Dave J. Colucci; Victoria Sanberg; Anne B. Clark	Life in urban vs rural habitats does not affect feather structure in a generalist bird, the American Crow
18	Breanna L. Bennett; Bracken Brown; David R. Barber	Developing a universal ethogram of breeding behavior for Black Vultures
19	Joel Yitmwa Hope; Adams Adamanyiwa Chaskda; Danjuma Filibus Dami; Ulf Ottosson; Iniunam Aniefiok Iniunam.	A survey of Nocturnal Birds in Relation to Survey Techniques and Time of the Day in an Afrotropical Environment, Nigeria.
20	Rebecca Davenport; Christopher Barton; Victoria Burgess; John Cox; Todd Fearer; Jeffery Larkin; Lauren Sherman; Madoline Varias; Steven Price	Effects of forest reclamation and landscape features on avian occupancy, species richness, and abundance in Appalachia
21	Eleonora Hargett; T.J. Benson; Liza Rossi; Auriel MV Fournier	Developing abundance estimates of Eastern Black Rails in Southeastern Colorado
22	Dylan A Cooper	Seasonal occupancy and use of nectar resources by Broad-billed Hummingbirds in the Phoenix Metropolitan Area of central Arizona
23	Jessica Schmit; Auriel MV Fournier; Caleb Roberts; Karen Rowe	Breeding and Migration Ecology of Arkansas King Rails
24	Shane A. McFoy; Dovid A. Kozlovsky; Eli Bridge; Brittany A. Coppinger; Robert L. Curry	Assessing hybrid chickadee cognitive impairment in a wild setting
25	Claire M. Jones; Brittany A. Coppinger; Robert L. Curry	How do chickadees communicate about the presence and absence of food?
26	Todd J. Underwood; Christopher M. Heckscher	GPS tracking reveals the second overwintering site and habitat of Veeries in South America
27	Brandon P Brogle; Peter G Saenger; Daniel Klem Jr	Evidence and consequences of bird-window collisions based on angle of strike.
28	Theodore J. Zenzal Jr.; Amanda N. Anderson; Brock Geary; Jessica Schulz; Robert Dobbs; Wylie C. Barrow Jr.; J. Hardin Waddle	Early Season Tropical Storms Impact Birds Breeding on a Barrier Island
29	Katie Barnes; Nicholas Ernst; Jacob Mattingly; Terry Master	Influence of Stream Morphology on Louisiana Waterthrush (<i>Parkesia motacilla</i>) Foraging, Provisions and Reproductive Success
30	Letitia M. Reichart	A scavenger hunt for undergraduate ornithology students
31	Luke K Butler; Sydney F Hope; Frank A Stabile	Long-term data show no major sex differences in molt phenology of the Carolina Chickadee
32	Jeffrey A. Spendelow	Evaluating current limiting factors and future threats to recovery of endangered Roseate Terns

33	Jeffrey A Stratford; Jaycee Young; Chrissy Shonk; Amanda Seyer; Jacob O'Boyle; Carolina Gutierrez; Gianna Adams; Ned Fetcher	Trophic ecology of grassland birds in forested ecosystems
34	Katelyn Ray; Sharon Gill; Mark Hauber	Assessing the novel use of a combinatorial referential alarm call to denote a brood parasite - Hawk Mountain: Ninety years of migration research and implications for ornithology -

Thursday June 22			
6	2 field trips (separate sign up required at registration)		
8	Breakfast (included with registration)	LGBTQIA+ Breakfast Social (separate sign up required at registration)	
9		Welcome and Intrudction	
930	DEI Workshop: What does Alexander Wilson mean to WOS and to each member? How should we celebrate him?	Talk on Alexander Wilson - Matthew Halley	
1030-1050		Questions & Time for Individual Reflection	
1050-1130		Small Group Discussions	
1130-12		Large Group Discussion	
12-130		Lunch (included with registration) & Student Mentor Lunch (separate sign up required at registration)	
130	Hawk Mountain Symposium	Laurie Goodrich	Hawk Mountain: Ninety years of migration research and implications for ornithology
145		Bob Curry	The central role of Hawk Mountain chickadees for research on a northward-shifting passerine hybrid zone
2		Bracken Brown	Hawk Mountain Sanctuary's New World Vulture Project: A Broad View in Conservation
215		Jean Francois Therrien	The American Kestrel nestbox program at Hawk Mountain: a model for global raptor conservation
230		David Barber	Populations Trends of Forest Nesting Birds in Pennsylvania: Local versus Regional Trends Pennsylvania:
245-330	Break		

Thursday June 22 Part 2

	Room A	Room B	Room C	
330	Climate Change and Plastic Adaptive Responses: Do American Crow Nestlings Alter Bill and Tarsus Growth Patterns in Response to Thermal Conditions? - Justin Mann	Synergistic effects of artificial light at night and anthropogenic noise on the physiology and behavior of a domesticated passerine - Montserrat Suárez-Rodríguez	Communicating ornithology through film, books, and art	Flight Paths How a Passionate and Quirky Group of Pioneering Scientists Solved the Mystery of Bird Migration - Rebecca Heisman
345	Characterizing bird count accuracy in a citizen science database - W. Douglas Robinson	Structure and Mechanics of Water-Holding Feathers of Namaqua Sandgrouse (<i>Pterocles namaqua</i>) - Lorna Gibson		Solid Air: Invisible Killer- Saving Billions of Birds from Windows - Daniel Klem
4	Massive mortality of Eared Grebes at Mono Lake California, and its relation to lake restoration: unintended consequences of lake restoration? - Joseph Jehl	Nest site fidelity and natal philopatry in Great Black-backed Gulls - Dylan Titmuss		Ploverville - Christy Frank
415	Experimental evidences of parasitic nestling rejection by a Shiny Cowbird host - Cynthia Ursino	How do birds use cities? Seasonal changes in occupancy of urban green spaces by native birds in a megacity - J. Jaime Zúñiga-Vega		
430	Breeding Ecology of Chukor Partridge in Lower Dir District, Khyber Pakhtunkhwa, Pakistan - Abid Hussain	Referential signaling in a communally breeding bird - Christina Riehl		Book Signing with Dan Klem and Rebecca Heisman
445	The importance of patch shape at threshold occupancy: Functional patch size within total habitat amount - Jeff Keller	The effect of group size, composition, and density on behavior of Carolina Chickadees - Brittany Coppinger		
530	Awards Ceremony [LOCATION]			
6-8	Banquet (Ticket included in student registration, ticket extra for regular registration)			