

**The 135<sup>th</sup> Meeting of American Ornithology**

**July 31 - August 5, 2017**

**Michigan State University, East Lansing, Michigan**



## **Program**

**The Inaugural Meeting of the American Ornithological Society  
&  
35<sup>th</sup> Meeting of the Society for Canadian Ornithologists/  
Société des ornithologistes du Canada**

# Welcome to East Lansing!



On behalf of the Local Organizing Committee, we welcome you to the 135th meeting of American Ornithology. We are excited to have all of you here on the Michigan State University campus for this historic inaugural meeting of the American Ornithological Society and the 35th meeting of the Society of Canadian Ornithologists/Société des ornithologistes du Canada.

We selected our conference theme “Birds in the Anthropocene” because it covers an expanding field of research being conducted in Michigan, in the Great Lakes region, and around the world. In addition to talks dedicated to birds during this time of rapid change, we have a rich scientific program with something for everyone. Talks include all aspects of avian biology from the microbes that inhabit birds to climate change and its impact on avian populations. You can learn about new tools and innovative approaches to answering questions, and find out about the recent advances and conservation for some of our nation’s most sensitive species, Kirtland’s Warbler and Sage Grouse. Spanning taxonomic boundaries, we have symposia that highlight critical issues in science today -- how to promote diversity in STEM disciplines and how to communicate science more effectively to a broader audience.



Building on green initiatives at recent meetings, we have pushed the boundary of hosting a sustainable, low-carbon footprint meeting. We’ve significantly reduced waste by excluding disposable utensils and dishes, food in wrappers, flyer inserts in registration materials, and bottled water. Additionally, we are reducing the carbon footprint, while supporting our local economy, by using local Michigan growers and brewers for food and beer. And, we went another step further and carefully selected vendors that engage in sustainable practices in their production, and implement policies and technologies that reduce their environmental impacts on terrestrial and aquatic ecosystems. Feel free to ask us about the other things we are doing to be GREEN!

We continue to work toward improving diversity, equity, and inclusion at our annual meetings. There is a symposium dedicated to diversity in science, we continue our tradition of the “Women Rocking Science” panel, and we will host our first annual LGBTQA social. As a community, we ask that you join us to make a welcoming and supportive environment for all our attendees. Please make it a priority to read our Code of Conduct Statement on page 17 in this program and the full Code of Conduct on our website. Also, let us know how we are doing, what you like, and what we may want to consider for future meetings.

We also give a special welcome to students, they are the future of our societies and our discipline. Try to think back to some of your first scientific conferences as a student; and how hard it was to approach the senior scientists – let’s try to make that easier and actively reach out and engage with students. Remember, they probably know more than you about recent advances in technology, social media, and statistical software.

Alright, it is that time to go gather with your fellow ornithologists, embrace being a bird nerd, talk science, eat local food, drink MI beer, dance, and be merry! And, do not forget to make sure you communicate your science and make everyone feel welcome and included in this annual gathering.

*Jen Owen, Chair*

*On behalf of the Organizing Committee*

*AOS & SCO-SOC 2017*

*Twitter: @AOS\_SCO\_2017; #AOSSCO17*

*Facebook: [www.facebook.com/aossco2017](http://www.facebook.com/aossco2017)*

*Conference Website: <http://aossco2017.fw.msu.edu/>*

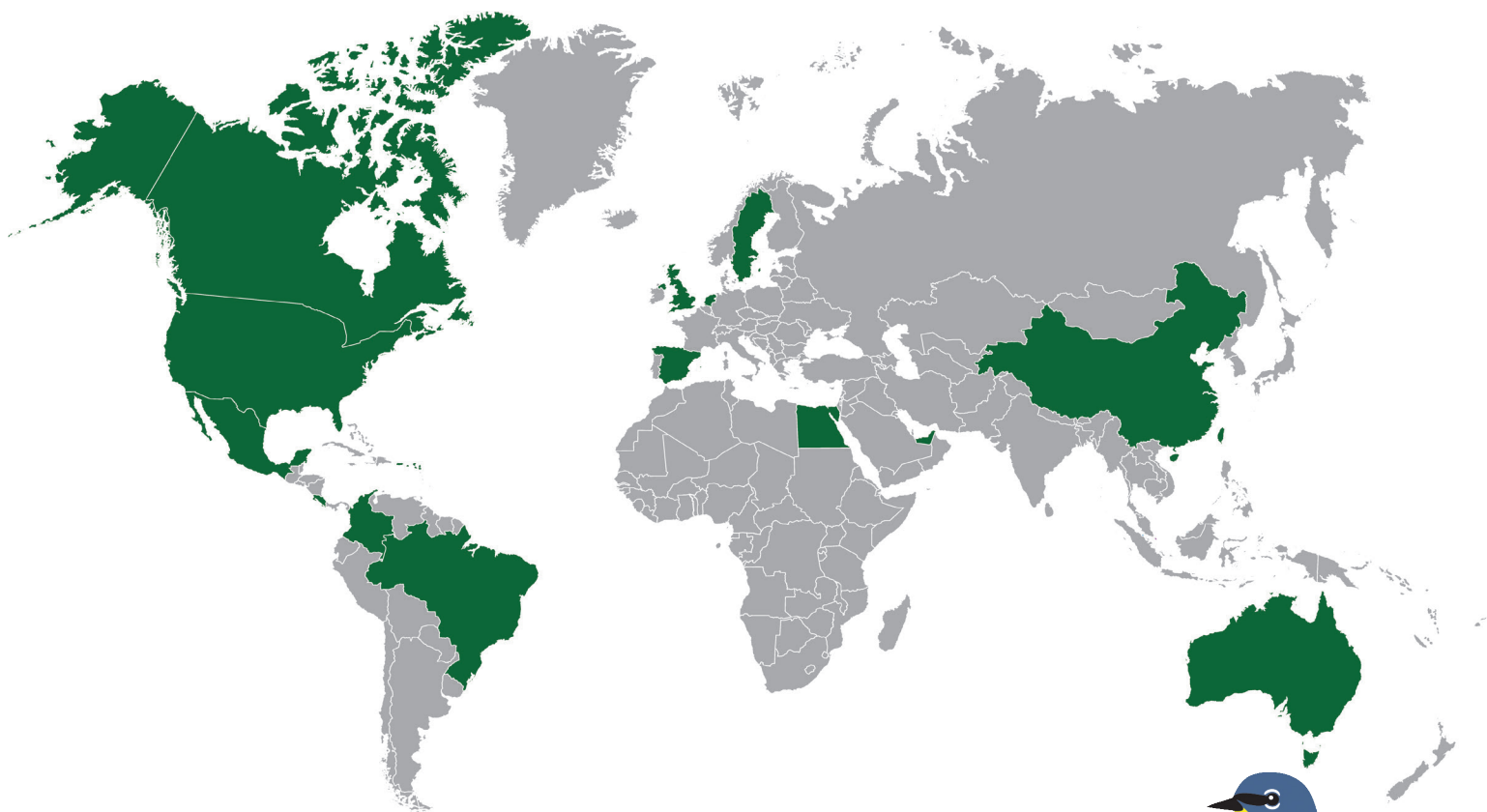


*Conference Program Cover & Logo – Kirtland's Warbler perched on a Jack Pine Branch - Michigan's iconic bird species and one of North America's conservation success stories.*

*Design by Kim Fake and Outer Designs and graphics by Outer Designs.*

## Contents

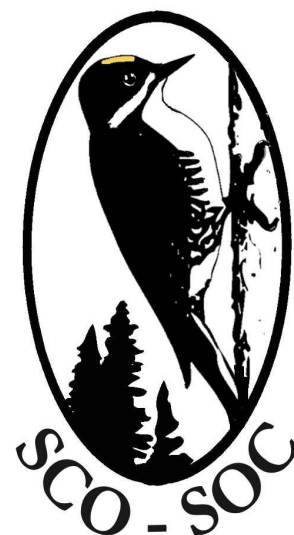
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## A cordial welcome to the registrants from the following countries:

United Arab Emerites  
Australia  
Brazil  
Canada  
China  
Colombia  
Costa Rica  
Egypt

Mexico  
Netherlands  
Puerto Rico  
Sweden  
Spain  
United Kingdom  
United States  
Virgin Islands



### SPONSORING SOCIETIES

American Ornithological Society

Website: <http://www.americanornithology.org/>

Society of Canadian Ornithologists /  
Société des Ornithologistes du Canada

Website: <http://www.sco-soc.ca>





# Organizers and Committees



## Conference Chair

Jen Owen, Michigan State University (MSU)

## Scientific Program Chair

Sharon Gill, Western Michigan University (WMU)

### Scientific Program

Sharon Gill (Chair), WMU  
Ken Otter (SCO), University Of  
Northern British Columbia  
Melissa Bowlin, University Of  
Michigan, Dearborn  
Catherine Lindell, MSU  
Jim Rivers, Oregon State University

### Fundraising

Steve Roels (Chair), MSU  
Darren Proppe, Calvin College

### Field Trips

Pam Rasmussen (Chair)  
Dave Ewert, The Nature Conservancy  
Sean Williams MSU  
Gerald Urquhart, MSU

### Food and Drinks

Sarah Bodbyl, MSU  
Daniel Mennill, University Of Windsor

### Museum Exhibit

Pam Rasmussen (co-Curator)  
Kara Haas (co-Curator)  
Teresa Goforth (Exhibits Director),  
Kelly Hansen (Design)  
Julie Fick (Education)

### Volunteer Coordinator

Liz Throckmorton

### Social Media & Communications

Nicole Wood, Central Michigan  
University

### Student Travel and Presentation Awards

Matt Carling, University of Wyoming  
(AOS Chair)  
Morgan Tingley, University of  
Connecticut (AOS)  
Dan Mennill, University Of Windsor  
(SCO)  
Greg Mitchell, Environment and  
Climate Change Canada (SCO)

### All-Out Ostrich Scramble Organizer

Catherine Lindell, Michigan State  
University

### Women Rocking Science Panel

Joelle Gehring, Federal  
Communications Commission

### Event Services: MSU College of Agriculture and Natural Resources

Megghan Honke Seidel, Coordinator  
Liz Throckmorton, Coordinator  
Jennifer Labun  
Shelby Warner

### Website Design & Maintenance

Jen Owen, James Vatter, Liz  
Throckmorton

### AOS Student Activities & Affairs

Nick Mason (Chair)  
Virginia Abernathy  
Phred Benham  
Shawn Billerman  
Amelia-Juliette Demery  
Kim Fake  
Anna Hiller  
Kathy Hixson  
Jack Hruska  
Maggie MacPherson  
Shailee Shah  
Nicholas Sly

### AOS Early Professionals

Sara Kaiser (Chair)  
Than Boves  
Nancy Chen  
Emily Cohen  
Melanie Colon  
Andrew Cox  
Graham Fairhurst  
Emma Greig  
Daniel Hanley  
Heather Mathewson  
Sara Morris  
Scott Taylor  
Christopher Tonra

### AOS Diversity and Inclusion

Kevin Omland (Chair)  
Viviana Ruiz Gutierrez  
Nancy Chen  
Nanda Cortes  
Scott Taylor  
Kimberly Sullivan  
Susannah Lerman  
Scott Edwards  
Karl Berg  
Mark Hauber  
Christopher Balakrishnan  
Susanna Campbell

# Sponsors



## Kirtland's Warbler Level Sponsors



*sponsoring Early Career Symposium*

## Piping Plover Level Sponsors



## Henslow's Sparrow Level Sponsors

- Michigan Audubon  
*sponsoring the keynote speaker, Deborah Cramer*
- MSU College of Agriculture and Natural Resources *sponsoring the banquet*

## Snowy Owl Level Sponsors

- Western Michigan University
- Visit Tucson
- MSU Office of Inclusion and Intercultural Initiatives *sponsoring the Women's Panel*

## NextGen Level Sponsors

- Grand Valley State University
- Northern Michigan University
- The Nature Conservancy (Michigan)
- MSU Department of Integrative Biology
- MSU Ecology, Evolutionary Biology, and Behavior Program
- Michigan Natural Features Inventory
- MSU College of Natural Science  
*sponsoring the Undergraduate Symposium*

## Cerulean Warbler Level Sponsor

- Capital Area Audubon Society  
*sponsor for contribution to the Bird Jam*
- University of Michigan Museum of Zoology
- Audubon Society of Kalamazoo  
*sponsor for contribution to the Bird Jam*
- Holland Audubon Club  
*sponsor for contribution to the Bird Jam*
- MSU Department of Fisheries and Wildlife  
*sponsoring the LGBTQA Social*

## Other Sponsor Levels

- Grand Rapids Audubon Club  
*sponsor for contribution to the Bird Jam*
- Muskegon County Nature Club in Memory of Joyce Sherburn  
*sponsor for contribution to the Bird Jam*
- Playmakers  
*sponsoring All-out Ostrich Scramble 5K*





*Visit* **OUR BOOTH**  
to find out more about our  
resources, big data, media,  
and teaching materials.

[BIRDS.CORNELL.EDU](https://birds.cornell.edu)

Left: Greater Sage-Grouse by Gerrit Vyn; right, top to bottom: Connecticut Warbler by Simon Boivin/Macaulay Library,  
Sagebrush Sparrow by Ben Bright/Macaulay Library, Kirtland's Warbler by Darren Clark/Macaulay Library





# General Information



## Registration and Information Desk

Registration and information materials will be located in the South Lobby of the Kellogg Hotel and Conference Center for the duration of the conference during times listed below. In addition, there will be an attended information desk outside Big Ten A and Centennial BC.

## Registration Hours:

Monday, July 31: 11 am - 5 pm

Tuesday, Aug. 1: 8 am - 8 pm

Wednesday, Aug 2 - Saturday Aug. 5: 7 am - 7 pm

## Venue Information

Kellogg Hotel and Conference Center (Kellogg) and Brody Hall (Brody) are where the majority of events and talks will be held. The Plenaries and Awards will be in Wells Hall, which is about a 15 minute walk from the Kellogg – Brody area. Please see map on p. 72 for locations.

## Registration Fee & Name Badge

Please be sure to wear your badge at all times. Admission to all conference activities is by name badge only, including admission to the MSU Museum. When you leave the conference, please contribute to our waste-free goal by returning your name badge holder to the Registration Desk.

All the events with \* in the Full Agenda (pp. 12-16) are open to all attendees. Events that had pre-registration are denoted by a R. For events that have onsite sign-up (U) please see the Registration.

Note your badge gives you unlimited entry to the MSU Museum (featuring “Michigan Bird Conservation Stories: Pigeons Past to Plovers Present”).

## Message Board

This will be maintained behind the Registration Desk throughout the meeting. Please feel free to put up messages at any time during the meeting.

## Coffee Breaks

Coffee breaks for conference attendees will be held in Kellogg Big Ten A and Centennial BC on Wednesday, August 2nd – Friday, August 4th and Kellogg South Lobby on Saturday, August 5th. Times: 10:00 am – 10:30 am, 3:00 pm – 3:30 pm. Coffee served at the meeting will be Rainforest Alliance Certified™ and Bird Friendly™ certified by the Smithsonian Migratory Bird Center, and roasted by a local Lansing coffee roaster. To further our commitment to a waste-free conference, you are encouraged to use your own mug during the breaks.

## Exhibitors

Exhibitors are located in area with posters and coffee breaks in Kellogg Big Ten A and Centennial BC. They will be open from 8:00 am on Wednesday, August 2nd to 3:30 pm on Friday. See p. 63 for list of exhibitors.

## Recreational Facilities/Fitness

Guests staying at the Kellogg and Marriott have access to their onsite fitness centers. Guests of Brody have use of MSU’s intramural recreational facilities (including tennis center and golf course).

Outdoor recreation is easily accessible via the River Trail that runs through campus and goes all the way to Old Town, Lansing (~8 miles). Bikes and canoe rentals are available. MSU Bikes is open Monday – Friday 10:00 am to 5:00 pm; Ph: 517-432-3400.



# General Information



## Meal Information

Brody Square Café is where we encourage attendees to eat meals. The dining room is open 24 hours; however, the full menus are only offered during the times listed below. Breakfast 7:00 am – 9:00 am; Lunch 11:00 am – 1:00 pm; Dinner 5:00 pm – 7:00 pm. A limited menu is available in the intervening hours. People attending meetings in Brody Café 221 and 220 will be able to select their food from main dining buffet area and then eat in their respective private meeting rooms. \*\* Note that water bottles are not allowed in Brody Café. You can either keep it in your bag/backpack or you can leave it with the volunteers attending a table outside the dining area.

Kellogg Hotel and Conference Center has an upscale, casual dining restaurant, The State Room, that is located on the lobby level of Kellogg. Reservations are required.

We also provide an extensive list of nearby eating establishments on our website:  
<http://aossco2017.fw.msu.edu/food/>.

## Internet Access

Wireless internet access is available in most buildings on campus by choosing the “MSUnet GUEST” network from your wireless options. You do not need a password; you just need to accept the Terms and Conditions in your browser. For more information on connecting wirelessly to the MSU network, please see <https://itservicedesk.msu.edu/CAisd/pdmweb.exe>.

## Printing and Reproduction Services

There is a copy center located inside the MSU Library. It is called the Hollander MakeCentral Service Desk. In addition to standard copy center services they do have 3 HP Plotters for printing posters (36” wide; \$6/linear foot). Call 517-884-6386 for info.

## MSU Union

About a 10 minute walk from the conference venues along Grand River Avenue, the MSU Union contains dine-in and carry-out restaurants, the Spartan Spirit Shop, a coffee shop, postal services, a credit union, a large study lounge, the MSU Dairy Store, and even a bowling alley.

## Smoking Policy

The MSU campus is fully tobacco-free as of August 2016. This new ordinance applies to the entire MSU property. If you are staying at the Kellogg Hotel and Conference Center or the Brody dorms, you will need to make a short walk north and fully cross Michigan Avenue (which borders both of these facilities) to use tobacco. The smoking policy for the Marriott Hotel states that smoking is not permitted inside of the building. You can find out more about the MSU ordinance and policy (including a map of tobacco-restricted areas) at [tobaccofree.msu.edu](http://tobaccofree.msu.edu).

## Alcohol Policy

In the Kellogg Hotel and Conference Center, outside alcohol is only permitted in the guestrooms. Banquet bars will be set up for the receptions for guests to purchase drinks. No alcohol is allowed at any functions in the common areas of Brody Hall.

# General Information



## Getting Around

The scientific program will take place at the Kellogg Hotel and Conference Center, which is just across the street from the Brody dorms. Although you can drive to the meeting events and/or rent a car, we have planned the conference such that attendees will not require a vehicle to go between events. However, you should be prepared to walk up to  $\frac{3}{4}$  of a mile on occasion. It may be hot outside, so please dress in light clothing, and bring a hat and sunscreen.

\*We do have a shuttle service for registrants who may need assistance getting from the hotels to the plenary talks and back. If you would like to use this service, please contact Liz Throckmorton at 517-388-6285 or Jen Owen at 228-355-1341.

## Lost and Found

Please check with the main desks of the various housing establishments or ask someone at the Registration Desk to assist you.

## Taxis & Public Transit

The CATA bus service is a great way to get around campus if you wish to explore campus or the City of Lansing. More information about this service can be found in the “Visiting Michigan” section of the website ([aossco2017.fw.msu.edu](http://aossco2017.fw.msu.edu))

The Green Cab is an environmentally-friendly taxi service offering transportation throughout the Greater Lansing area, including East Lansing, Holt, Delta, Williamston, Okemos, Haslett and Grand Ledge. Their number is 517-643-1905.

## Parking

There is free parking on the MSU campus about 1 mile from the Brody Complex. To purchase a weekly parking pass for \$12/week for MSU campus (lots are within walking distance of venue) please check in with the Registration Desk.

## EMERGENCY AND MEDICAL

MSU Police Department - Phone: 517-355-2221 [police.msu.edu](http://police.msu.edu)  
Emergency: Call 911

There are also emergency “green light phones” located throughout campus, which provide a direct connection to security for emergency situations or general assistance.

For information about late night safety on campus including MSU’s StateWalk service, which allows individuals to be safely escorted between on-campus destinations, please refer to <https://admissions.msu.edu/life-at-msu/safety.aspx>.

## Emergencies & Medical Facilities

On Campus Clinic: Olin Health Center and Pharmacy: 517-884-6546; Address: 463 E Circle Drive, East Lansing  
Hours: Monday through Friday, 8:00 am - 5:00 pm.

Sparrow Urgent Care: 517-333-6562. Address: 2682 E. Grand River Avenue, East Lansing  
Hours: Monday through Sunday, 8:00 am – 8:00 pm

Sparrow Hospital Emergency: 517-364-2616. Address: 1215 E. Michigan Avenue, Lansing  
Hours: 24-hour emergency department

# General Information



## Family Accommodations

Breastfeeding accommodations: Kellogg offers private rooms during the day for women looking for space to breast feed. Just go to the front desk of the hotel and they will give you a key and the room location.

Childcare services: The AOS-SOC 2017 does not provide child care services. Listed below are several providers in the area that offer temporary child care services.

Family Growth Center (<http://www.childandfamily.org/page.php?id=130>)

Accepts drop-ins, call in advance, two time slots (9:00 am – 11:30 am or 1:30 pm – 4:00 pm)

517-351-6641; Only have 1 teacher next week so can only accept 4 children max.

People's Church (517-332-5073)

Drop-ins if space available (currently only accepting children 5yrs and older)

Have daily rate but may be able to work our hourly rate if needed

Hours: Monday - Friday 7:10 am - 6:00 pm

Please also see <https://www.care.com> to search for providers of childcare that can come to the hotel. The site allows you to filter out any providers that have not done a background check.

## Early morning bird walks

There will be a free early morning local bird walk each morning during the conference (2–5 August 2017), each leaving at 6 a.m. and returning by 8 a.m. in time for the plenary talks. We expect to see a variety of common breeding birds on the first three walks. Sign up at the registration desk; first-come first-served. All locations are within 15-20 minutes of the Kellogg Center, and vans will leave from the Kellogg Center at 6 a.m. sharp. Bring binoculars, rain gear, insect repellent, water and a snack. Please see website for more details.

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# Student Presentation and Travel Awards



The Student Presentation Awards is a joint program sponsored by AOS and SCO/SOC. Students whose presentations are marked by asterisks (\*) in the Program-at-a-glance are “Finalists” whose presentations will be considered for awards and judged by a three-person panel.

The Student Travel and Presentation Awards Committee awarded 13 travel awards to postdoctoral fellows and 122 awards to graduate and undergraduates to allow them to present their research. The complete list of travel award winners can be found at <http://aossco2017.fw.msu.edu/student-and-early-professional-travel-awards/>.

# Agenda



## AOS & SCO-SOC 2017 FULL AGENDA

Special Events – the number in ( ) after event name is the page number where a full description can be found; W = website only

Superscript letters before event name indicate whether event

\* = is open to all

<sup>R</sup> = requires pre-conference registration

<sup>U</sup> = requires sign-up at registration desk

<sup>C</sup> = is for committee members only

### Food & Beverage Key

- = Heavy hors d'oeuvres
- = Light snacks
- = Meal served
- = Beer/Wine/Cash bar
- = Coffee/tea
- = Dessert

## MONDAY, JULY 31, 2017

TIME	EVENT	LOCATION
11:00 am – 5:00 pm	Registration & Information	Kellogg South Lobby
1:00 pm – 5:00 pm	<sup>R</sup> Workshop: Professional Development for students	Brody Room 134
3:30 pm – 5:00 pm	<sup>C</sup> AOS Executive Committee Meeting	Kellogg Room 105
6:00 pm – 9:00 pm	<sup>C</sup> AOS Council Meeting	Kellogg Room 105

## TUESDAY, AUGUST 1, 2017

TIME	EVENT	LOCATION
6:00 am – 5:00 pm	Field Trip: Kirtland's Warbler, Huron National Forest (W)	Kellogg Main Lobby
8:00 am – 8:00 pm	Registration & Information	Kellogg South Lobby
8:00 am – 5:00 pm	<sup>R</sup> Workshop: Programming, data, and graphing in R	Brody 175
	<sup>R</sup> Workshop: Coordinate landbird banding in migration	Brody 136
8:00 am – 3:00 pm	<sup>C</sup> AOS Council Meeting	Kellogg 105
8:00 am – 2:00 pm	<sup>C</sup> SCO Board Meeting	Kellogg Heritage
1:00 pm – 5:00 pm	<sup>R</sup> Workshop: Drone technology for ornithologists	Brody 134
3:30 am – 5:00 pm	AOS Fellows' Annual Meeting (Fellows only)	Kellogg Auditorium
5:30 pm – 7:00 pm	<sup>R</sup> AOU Fellows Dinner	Kellogg Red Cedar
7:00 pm – 8:00 pm	* Keynote Speaker: Deborah Cramer	Kellogg Big Ten A
8:00 pm – 10:00pm	* Opening Reception	Kellogg East Patio



# Agenda



## WEDNESDAY, AUGUST 2, 2017

TIME	EVENT	LOCATION
6:00 am – 8:00 am	<sup>U</sup> Early Morning Bird Walk (W)	Kellogg Main Lobby
7:00 am – 7:45 am	<sup>U</sup> All-out Ostrich Scramble 5K	Sparty Statue
7:00 am – 7:00 pm	Registration & Information	Kellogg South Lobby
12:00 pm – 7:00 pm	Silent Auction	Kellogg Willy Room
8:00 am – 8:30 am	Welcome & Opening Remarks	Wells Hall 115
8:30 am – 9:30 am	Plenary: Amanda Rodewald	Wells Hall 115
9:30 am – 10:00 am	Announcements	Wells Hall 115
10:00 am – 10:30 am	Coffee Break & Exhibitors ☕	Kellogg Big Ten A & Centennial BC
10:30 am – 12:00 pm	<b>Concurrent Sessions:</b> S1: #TheTweetingBird: Science communication S2: Kirtland's Warbler Full Life Cycle G1: Migration and Movement I: Monitoring Migration G2: Urban Ecology I G3: Landscape Ecology G4: Evolution I: Hybridization and Speciation G5: Ecotoxicology G6: Modelling	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 103 Kellogg 106 Kellogg 104 Brody 134 Brody 136
12:00 pm – 1:30 pm	Lunch	Brody Café
12:00 pm – 1:30 pm	<sup>R</sup> Workshop: Public policy primer for ornithologists	Brody Café 221
12:00 pm – 1:30 pm	<sup>C</sup> Diversity & Inclusion Committee Meeting	Brody Café 220
12:00 pm – 5:00 pm	*Silent Auction	Kellogg Willy Room
1:30 pm – 3:00 pm	<b>Concurrent Sessions:</b> S1: Increasing Diversity in Ornithology S2: Kirtland's Warbler Full Life Cycle G7: Migration and Movement II: Staging G8: Urban Ecology II G9: Parental Care G10: Evolution II: Insights from morphology	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 103 Kellogg 106 Kellogg 104
3:00 pm – 3:30 pm	Coffee Break & Exhibitors 🍏 ☕	Kellogg Big Ten A & Centennial BC
3:30 pm – 4:00 pm	Plenary: Stefanie LaZerte, SCO Early Career Awardee	Brody 134 - 138
4:00 pm – 5:00 pm	* Early Professional Mini-Talk Symposium	Brody 134 - 138
5:30 pm – 7:00 pm	<sup>R</sup> Early Professional Social 🍷 🍴	Kellogg Big Ten A
5:30 pm – 6:30 pm	*Reception at MSU Museum (p. 18)	MSU Museum
7:00 pm – 9:00 pm	* Poster reception I (P1 – P60) 🍷 🍴	Kellogg Big Ten A
9:15 pm – 11:15 pm	<sup>U</sup> Pub Crawl (p. 19)	Lansing Downtown

# Agenda



THURSDAY, AUGUST 3, 2017

TIME	EVENT	LOCATION
6:00 am – 8:00 am	<sup>U</sup> Early Morning Bird Walk (W)	Kellogg Main Lobby
7:00 am – 7:00 pm	Registration & Information	Kellogg South Lobby
7:00 am – 8:00 am	<sup>C</sup> BNA – AOS Liaison Committee	Brody 221
8:00 am – 7:00 pm	Silent Auction	Kellogg Willy Room
8:00 am – 9:00 am	Plenary: Erin Bayne	Wells Hall 115
9:00 am – 9:45 am	AOS Awards	Wells Hall 115
10:00 am – 10:30 am	Coffee Break & Exhibitors ☕	Kellogg Big Ten A & Centennial BC
10:30 am – 12:00 pm	<b>Concurrent Sessions:</b> S4: Bio-logging Tools to Study Landbird Migration S5: Agriculture, Ecosystem Services, and Conservation G11: Behavior I G12: Conservation I: Species-based Approaches G13: Technology Advances in Monitoring G14: Evolution III: Genomics G15: Disease & Microbial Ecology G16: Ecology	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 103 Kellogg 106 Kellogg 104 Brody 134 Brody 136
12:00 pm – 1:30 pm	Lunch	Brody Café
12:15 pm – 1:15 pm	* Women Rocking Science Panel: Q & A (p. 19)	Kellogg Auditorium
12:00 pm – 1:00 pm	* SCO-SOC Annual General Meeting	Brody 112
12:00 pm – 1:30 pm	<sup>R</sup> Workshop: Permits – how to pass GO!	Brody Café 220
1:30 pm – 3:00 pm	<b>Concurrent Sessions:</b> S4: Bio-logging Tools to Study Landbird Migration S6: Estimating Spatial & Temporal Distributions G17: Behavior II G18: Conservation II: Community-based Approaches G19: Phylogeography & Systematics I G20: Climate Change I G21: Avian Parasites G22: Life Histories	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 103 Kellogg 106 Kellogg 104 Brody 134 Brody 136
3:00 pm – 3:30 pm	Coffee Break & Exhibitors 🍏☕	Kellogg Big Ten A & Centennial BC
3:30 pm – 5:00 pm	<b>Concurrent Sessions:</b> S4: Bio-logging Tools to Study Landbird Migration S6: Estimating Spatial & Temporal Distributions G23: Lighting Talks I: Population Ecology & Conservation G24: Population Dynamics I G25: Phylogeography & Systematics II G26: Climate Change II G27: Physiology and Biomechanics G28: Migration and Movement III: Dispersal & Movement	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 103 Kellogg 106 Kellogg 104 Brody 134 Brody 136
4:30 pm – 6:00 pm	<sup>C</sup> AOS Publication Advisory Committee	Kellogg Heritage
5:00 pm – 6:00 pm	<sup>R</sup> Workshop: Acoustics Passive Acoustic Monitoring	Brody 136
5:00 pm – 7:00 pm	* LGBTQA Social (p. 19) 🍷🍸	Dublin's Pub
7:00 pm – 8:00 pm	* Meet the Editors (p. 19) 🍷🍸	Brody 136
7:00 pm – 9:00 pm	* Poster reception II (P61 – P120) 🍷🍷	Kellogg Big Ten A

# Agenda



## FRIDAY, AUGUST 4, 2017

TIME	EVENT	LOCATION
6:00 am – 8:00 am	<sup>U</sup> Early Morning Bird Walk (W)	Kellogg Main Lobby
7:00 am – 7:00 pm	Registration & Information	Kellogg South Lobby
8:00 am – 5:00 pm	* Silent Auction	Kellogg Willy Room
8:00 am – 9:30 am	Plenaries: AOS Early Career Awardees: Ton, Chen, Butler	Wells Hall 115
9:30 am – 10:00 am	SCO-SOC Awards	Wells Hall 115
10:00 am – 10:30 am	Coffee Break & Exhibitors ☕	Kellogg Big Ten A & Centennial BC
10:30 am – 12:00 pm	<b>Concurrent Sessions:</b> S7: Elaina M. Tuttle and the White-throated Sparrow S8: Trait Divergence and Speciation G29: Migration and Movement IV: Pathways and Stopovers G30: Undergraduate Symposium I G31: Conservation III: Conservation Genetics G32: Mating Systems & Sexual Selection G15: Brood Parasitism G16: Birds and Agriculture	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 103 Kellogg 106 Kellogg 104 Brody 134 Brody 136
12:00 pm – 1:30 pm	Lunch	Brody Café
12:00 pm – 1:30 pm	<sup>C</sup> Auk: Editorial Board Meeting & Lunch	Brody Café 221
12:00 pm – 1:30 pm	<sup>C</sup> Condor: Editorial Board Meeting & Lunch	Brody Café 220
1:30 pm – 3:00 pm	<b>Concurrent Sessions:</b> S9: Avian Responses to Energy Development S10: Cavity Nesting Bird Ecology and Conservation G35: Lightning Session II: Evolution, Systematics, and Behavior G36: Undergraduate Symposium II G37: Conservation IV: Global Concerns G38: Annual Cycles G39: Habitat Selection I G40: Restoration Ecology	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 103 Kellogg 106 Kellogg 104 Brody 134 Brody 136
3:00 pm – 3:30 pm	Coffee Break & Exhibitors 🍏 ☕	Kellogg Big Ten A & Centennial BC
3:30 pm – 5:00 pm	<b>Concurrent Sessions:</b> S9: Avian Responses to Energy Development S10: Cavity Nesting Bird Ecology and Conservation G41: Breeding Behavior I G42: Communication and Song I G43: Population Dynamics II G44: Habitat Selection II	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 106 Brody 134 Brody 136
5:00 pm – 6:00 pm	* Round Table 1: The Avian Microbiome	Brody 134
5:00 pm – 6:00 pm	* Round Table 2: Q&A about using social media for science	Brody 136
5:00 pm – 7:00 pm	<sup>C</sup> AOS Publications Team Meeting	Brody 221
6:30 pm – 8:00 pm	* Quiz Bowl (p. 19) 🏆	Kellogg Big Ten B
8:00 pm – 10:00 pm	<sup>R</sup> Bird Jam: The Ragbirds and the Screamin' Jays (p. 19) 🍷 🍷	Kellogg Big Ten A

# Agenda



## SATURDAY, AUGUST 5, 2017

Time	Event	Room & Location
6:00 am – 8:00 am	<sup>U</sup> Early Morning Bird Walk (W)	Kellogg Main Lobby
7:00 am – 7:00 pm	Registration & Information	Kellogg, South Lobby
8:00 am – 9:00 am	Plenary: Michael Sorenson	Wells Hall, Room 115
9:00 am – 9:45 am	Student Presentation Awards	Wells Hall, Room 115
10:00 am – 10:30 am	Coffee Break ☕	Kellogg South Lobby
10:30 am – 12:00 pm	<b>Concurrent Sessions:</b> S7: 45 Years of BHCO Control: What Have We Learned? S8: Sagebrush Birds in a Changing Environment G45: Breeding Behavior II G46: Communication & Song II G47: Evolution IV: Habitat Influences on Diversification	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 106 Brody 134
12:00 pm – 1:30 pm	Lunch	Brody Café
12:00 pm – 1:30 pm	<sup>R</sup> Golden Auks (p. 19) ✂	Brody Café 221
12:00 pm – 1:30 pm	<sup>C</sup> COPO Publication Team Meeting	Brody Café 220
12:15 pm – 1:00 pm	<sup>U</sup> Bird/Vertebrate Collections Tour	Meet in Kellogg Lobby
1:30 pm – 3:00 pm	<b>Concurrent Sessions:</b> S7: 45 Years of BHCO Control: What Have We Learned? S8: Sagebrush Birds in a Changing Environment G48: Community Ecology G49: Population Dynamics III G50: Migration & Movement V: Connectivity G51: Management	Kellogg Auditorium Brody 112 Kellogg 105 Kellogg 106 Brody 134 Brody 136
3:00 pm – 3:30 pm	Coffee Break ☕	Kellogg South Lobby
3:30 pm – 5:00 pm	* Softball Game: Canada/World vs. US (p. 19)	Patriarche Park
6:30 pm – 8:00 pm	<sup>R</sup> Banquet (p. 19) ✂🍷	Huntington Club



# Code of Conduct



Please see full code at <http://aossco2017.fw.msu.edu/code-of-conduct/>

Michigan State University is committed to creating and maintaining an inclusive community in which students, faculty, and staff can work together in an atmosphere free from all forms of discrimination. MSU is strongly opposed to discrimination and harassment, and such behavior is prohibited by University policy.

The Office of Institutional Equity (OIE; <http://oie.msu.edu/index.html>; 517-353-3922) reviews concerns related to discrimination and harassment based on sex, gender, gender identity, race, national origin, religion, disability status, and any other protected categories under the University Anti-Discrimination Policy and Policy on Relationship Violence and Sexual Misconduct.

OIE accepts calls, emails, and walk-in reports regarding any matters related to discrimination, harassment, sexual misconduct, relationship violence, and stalking. OIE staff can help you file a report, investigate your report, and connect you with resources.

## **Michigan State University Notice of Nondiscrimination**

(<http://oie.msu.edu/documents/2017%2001-06%20Non-Discrimination%20Notice%20Final.pdf>)

### **To file a report please click on the following:**

Public Incident Reporting Form - This report goes directly to OIE and the MSU Police  
([https://oie-msu-gme-advocate.symlicity.com/public\\_report/index.php/pid992396?](https://oie-msu-gme-advocate.symlicity.com/public_report/index.php/pid992396?))

American Ornithology 2017 is the joint annual conference of the American Ornithological Society (AOS) and the Society of Canadian Ornithologists (SCO). American Ornithology 2017 is dedicated to providing a safe, hospitable, and productive environment for everyone attending this event regardless of ethnicity, religion, disability, physical appearance, gender, or sexual orientation. The American Ornithology 2017 event is intended to advance our understanding of birds and their conservation through open and honest communication of original research and the broad exchange of ideas. We understand that effective communication requires that we treat each other with respect and courtesy in face-to-face, written and electronic interactions and that we respect the intellectual property of our colleagues. We represent the field of ornithology and it is imperative that we behave as professionals toward each other, to society employees, American Ornithology 2017 volunteers, sponsors, exhibitors and meeting venue staff.

American Ornithology 2017 participants should be able to engage in open discussions free of discrimination, harassment and retaliation. It is important to remember that a community where people feel uncomfortable or threatened is neither healthy nor productive. Accordingly, American Ornithology 2017 prohibits intimidating, threatening, or harassing conduct during our conferences. This policy applies to speakers, staff, volunteers, exhibitors, and attendees. Conference participants violating these rules may be expelled from the conference, or sanctioned, or both at the discretion of MSU Campus authorities and the leadership of AOS and SCO, the organizing societies of the American Ornithology 2017 conference.

# Social Events



**Registration not required unless description says otherwise.**

**Posters.** Kellogg Big Ten A. There are two groups of posters. Group 1 (P1-P60) will be viewable from 12:00 pm on Wednesday thru 12:00 pm on Thursday. Reception will occur on Wednesday, August 2nd (7:00 pm – 9:00 pm) Kellogg Big Ten A.

Group 2 (P61 -P120) will be viewable from 3:00 pm on Thursday thru 3:30 pm on Friday. Reception will occur Thursday, August 3rd (7:00 pm – 9:00 pm) Kellogg Big Ten A.

Both evenings include cash bar and sweet and salty snacks.

**Silent Auction.** Wednesday, August 2nd (12:00 pm – 6:00 pm) and Thursday, August 3rd – Friday, August 4th (8:00 am – 6:00 pm) Kellogg Willy Room.

From jewelry to fine art to books and monographs, we've got it all. The generosity of our donors and bidders help fund events hosted by the AOS Student Affairs Committee at future conferences.

**AOS Fellows Dinner.** Tuesday, August 1st (5:00 pm – 7:00 pm) Kellogg Red Cedar Room.

The dinner is open to AOS Fellows and their guests, and Early Professional Award winners. Registration required, \$60; includes buffet dinner with Michigan ingredients and cash bar.

**Opening Reception.** Tuesday, August 1st (8:00 pm – 10:00 pm) Kellogg East Side Patio.

Enjoy a summer evening in Michigan out on the East Patio by the Red Cedar River (*Lincoln Room if raining*). Come and connect with your old colleagues, and get ready for an exciting week of great science and fun with your fellow ornithologists. Includes heavy appetizers and cash bar.

**The All-out Ostrich Scramble 5K.** Wednesday, August 2nd (7:00 am) Start is at the Spartan Statue ("Sparty"; <https://maps.msu.edu/>), a 5 minute walk from Kellogg and Brody.

Race along the beautiful Red Cedar River. Prizes have been generously sponsored by Playmakers! Registration required, \$10; water provided.

**MSU Museum Exhibit.** "Michigan Bird Conservation Stories: Pigeons Past to Plovers Present". Wednesday, August 2nd (all week during museum hours: Monday – Friday, 9:00 am – 5:00 pm; Saturday, 10:00 am – 5:00 pm; and Sunday, closed) Heritage Gallery.

Explore Michigan's bird conservation stories from losses of the past to modern successes. Specimens helping to tell these stories include Passenger Pigeons, Trumpeter Swans, Sandhill Cranes, and Piping Plovers. See how we learn from past mistakes to ensure the future of many bird species in Michigan.

**Reception for MSU Museum Exhibit.** Wednesday, August 2nd (5:30 pm – 6:30 pm) MSU Museum Heritage Gallery. Join us as we celebrate the opening of this year-long exhibit, "Michigan Bird Conservation Stories: Pigeons Past, Plovers Present". Admission only requires your conference badge and includes light snacks.

**Student & Mentor Lunch.** Wednesday, August 2nd (12:00 pm – 1:30 pm) Brody Dining Room.

We are offering a professional development opportunity by matching students and professionals that share ornithological interests to learn about potential career paths, graduate school opportunities, and research possibilities over lunch in an informal setting. Registration required; lunch provided.

**Early Professional Mixer.** Wednesday, August 2nd (5:30 pm – 7:00 pm) Kellogg Big Ten A.

At this event (immediately following the Early Professionals Mini-talk Symposium), early professionals will mingle with each other and senior scientists from academia, government agencies, and the private sector. Registration required; heavy appetizers and cash bar and 1 drink ticket provided.

# Social Events



**Pub Crawl.** Wednesday, August 2nd (9:15 pm – 11:45 pm) Downtown Lansing, MI.

Downtown Lansing boasts many pubs and microbreweries, and this pub crawl will take you on an adventure through town! Sign-up will be at the Registration Desk. Participants can return to the conference venue at any time via the CATA bus.

**Women Rocking Science Panel.** Thursday, August 3rd (12:00 pm – 1:15 pm) Kellogg Auditorium.

This year's panel will focus on overcoming leadership, self-promotion, and self-assertion challenges unique to women. Panel Members: Amanda Rodewald, Francie Cuthbert, Sue Haig, and Kathy Martin. Moderator: Amanda Rodewald.

**Student - Professional Mixer.** Thursday, August 3rd (5:00 pm – 7:00 pm) Kellogg Big Ten A.

At this event we provide an environment that facilitates students' ability to connect with established professionals with similar research interests. Registration required; heavy appetizers provided and cash bar.

**LGBTQA Social.** Thursday, August 3rd (5:00 pm – 7:00 pm) Dublin Square Irish Pub & Restaurant.

Interested in connecting with other LGBTQA ornithologists? Join us at the inaugural AOS LGBTQA social at the Dublin Square Pub. Everyone is welcome to attend this social. Includes light snacks; cash bar.

**Meet the Journal Editors.** Thursday, August 3rd (7:00 pm – 8:00 pm) Brody 136.

Meet the Editors of The Auk and The Condor. Get answers to your questions about the publication and review process. Pizza and soft drinks included!

**Quiz Bowl.** Friday, August 4th (6:30 pm – 8:00 pm) Kellogg Big Ten A.

One of the most popular events of the meeting, the Jeopardy-style quiz bowl offers a night of entertainment as self-assembled teams of three battle to prove their expert knowledge of ornithology. Cash bar.

**Bird Jam.** Friday, August 4th (8:00 pm – 10:15 pm) Kellogg Big Ten A.

Our annual jam will kick off with our very own ornithologist musicians, the Screamin' Jays. The Ragbirds will follow as the headliner. This folk/rock/world fusion band out of Ann Arbor is recognized worldwide, and will guarantee a lively night of fun and dancing! Registration required, \$15; cash bar and light snacks.

**Golden Auks Luncheon.** For all of you vibrant members who likely entered college before or during the 70s, are now retired or might be more than eligible to retire from your professional jobs (i.e., one of AOS' diehards!), please join us for the annual Golden Auks luncheon. Registration required; lunch provided.

**U.S. versus Canada (& World) Softball Game.** Saturday, August 5th (3:15 pm – 5:15 pm) East Lansing.

Please join us for a friendly softball game between AOS and SCO (aka "Team USA" and "Team CAN (& World)") on the diamonds of Patriarche Park in East Lansing! Bats, balls, bases, and beverages will be provided, but please bring your own glove to play. Registration is limited to 15 players per team, so please sign-up today at <https://goo.gl/Ukox34>. Please contact the game's coordinator, Andrew Dennhardt ([dennhard@msu.edu](mailto:dennhard@msu.edu)), if you have any questions or special requests.

**Closing Banquet.** Saturday, August 5th (5:30 pm – 10:00 pm) MSU Huntington Club.

The culminating social event of the week, this banquet will boast delicious local and organic foods, and Michigan-made craft beer, as a commitment to our goal of sustainability and supporting the local economy. Dinner starts at 6:30 pm. Registration required, \$60. Includes dinner; cash bar.

# Keynote: The Narrow Edge by Deborah Cramer



**TUESDAY** at 7 pm in the Kellogg Auditorium



Please join us as we kick-off the official start of our meeting by attending the address by our keynote speaker, Deborah Cramer. This event is free and open to the public with a book signing to follow.

Deborah Cramer is an environmental writer, visiting scholar in the Environmental Solutions Initiative at MIT, and author of *The Narrow Edge: A Tiny Bird, an Ancient Crab, and an Epic Journey*. *The Narrow Edge* received the Best Book Award from the National Academy of Sciences, Medicine and Engineering, Rachel Carson Book Award from The Society of Environmental Journalists, and the Reed Award for Environmental Writing from the Southern Environmental Law Center. In awarding Deborah, the National Academy of Sciences described *The Narrow Edge* as "A beautifully written natural history of an imperiled bird that embeds evolutionary biology and systematics, marine ecology, physiology, natural history, paleontology, cultural history, and immunology in an absorbing, personal narrative." Deborah has written two books on oceans, *Great Waters: An Atlantic Passage* and *Smithsonian Ocean: Our Water Our World*, and her work has appeared in Audubon, BBC Wildlife, the Boston Globe, and The New York Times.

## The Narrow Edge: Red Knots in the Anthropocene

Red knots, flying between Tierra del Fuego and their Arctic nesting grounds each year, take the measure of a shoreline running the length of two continents. In many of the birds' critical stopovers, it is a shoreline of the Anthropocene, increasingly reshaped by development, overfishing, beach erosion and storm surges. These changes are touching the knots, listed as endangered in a number of countries along its route, and now the first U.S. bird listed under the U.S. Endangered Species Act because its future is imperiled by global warming. Author Deborah Cramer accompanied the birds along their extraordinary migration to bring back a firsthand account in her award-winning book *The Narrow Edge: A Tiny Bird, An Ancient Crab, and An Epic Journey*. Join her to explore the lives of Red Knots in a rapidly changing world, and the work of the many scientists dedicated to providing the birds safe passage.

*Deborah Cramer's talk is generously sponsored by Michigan Audubon*



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# Don't Miss These Plenaries!



Join us each morning as we begin the day's scientific program with addresses by our plenary speakers. In presenting these talks, we recognize the significant contributions of each of our established plenary speakers as well as the exceptional promise of Early Career researchers recognized this year by the American Ornithological Society. Early morning plenaries begin after morning announcements in Wells Hall B115.

Be sure to join us for the talk by the winner of the inaugural Early Career Researcher Award from Society of Canadian Ornithologists/ Société des ornithologistes du Canada, which will be held at the special time of Wednesday, August 3, 3:30 pm, in Brody 134-138.

## Wednesday Plenary: Dr. Amanda Rodewald, Cornell University



### The Anthropocene frontier: understanding ecological responses to urbanization

With urban land expected to triple between 2000-2030, understanding socioecological feedbacks that operate within urbanizing landscapes has never been more essential to safeguard ecological services, biodiversity, and human health and well-being. In many respects, cities can be regarded as knowledge frontiers of the Anthropocene. Among the defining characteristics of many urban ecosystems are human disturbance, introduced and/or abundant predators, and a rich assortment of anthropogenic resources like birdseed. The consequences of these urban attributes to population demography, community structure, species interactions, and selective environments can be profound, yet remain poorly understood. From 2001-2014, my students and I investigated individual-, population-, and community-level responses of birds to urbanization and evaluated the underlying behavioral and demographic processes. Human inputs to urban systems fundamentally altered species interactions in ways that affected bird-plant networks, changed the nature of predator-prey relationships, and altered selective environments. Despite the common perception that

demographic consequences of urbanization are density-mediated, several lines of evidence suggest that trait-mediated and sometimes nuanced behavioral responses are important drivers of change.

**BIOGRAPHY:** Amanda Rodewald is the Garvin Professor of Ornithology and Director of Conservation Science at the Lab of Ornithology and in the Department of Natural Resources at Cornell University. Amanda received a B.S. in Wildlife Biology from University of Montana (1992), an M.S. in Zoology from University of Arkansas (1995), and a Ph.D. in Ecology from Pennsylvania State University (2000). From 2000 until joining the Lab in 2013, she was a Professor of Wildlife Ecology in the School of Environment and Natural Resources at Ohio State University. Amanda is a fellow of the American Ornithologists' Union (AOU) and of the CIC Academic Leadership Program. Her leadership roles have included serving on the Science Advisory Board of US EPA, the Scientific Review Committee of the National Socio-environmental Synthesis Center (SESYNC), council of the AOU, editorial boards of scientific journals, and the Faculty Advisory Board for the Atkinson Center for a Sustainable Future. Amanda's research program seeks to understand how human activities and global change influence animal communities and then apply that understanding to conservation. Much of her current research focuses on socioecological dynamics and conservation in working landscapes of Latin America. Amanda tightly integrates her research and outreach efforts to inform policy and management, as such, regularly interacts with government agencies, conservation organizations, and private landowners. Among her outreach activities, she is a regular contributor to The Hill, a news source for politicians and advisors on Capitol Hill.

# Don't Miss These Plenaries!



## Thursday Plenary: Dr. Erin Bayne, University of Alberta



### How many birds will I kill in my lifetime directly vs. indirectly: Which matters more?

Every day birds and their nests are killed or destroyed. When people or human infrastructure cause this mortality, it is called incidental take. Incidental take is illegal under the Migratory Birds Convention Act. This has led to concerns from citizens and industry about how to be compliant with the law. Industrial activities during the breeding season are a focal point for incidental take because spring/ summer activities by industry do destroy bird's nests. Policy to reduce incidental take recommends timing activities outside the avian breeding season. While many industries try to meet such timing constraints, social and economic limitations make this difficult. Thus, during the breeding season many companies plan to avoid areas where there are high densities of nests, try to find nests in areas where they are operating, and buffer the area where known birds are actively nesting. Whether such an approach reduces incidental take remains unclear, which should be a concern given the financial costs involved.

In contrast, millions to potentially billions of birds are killed in collisions with the windows of people's homes and predation by their cats. From a

conservation perspective, finding a solution to these issues may have a far greater "bang for the buck" than mitigating accidental nest destruction by industry. It also may be far more relevant to engaging the average person in avian conservation. I will show cost-benefit analyses that assess how money currently spent by industry to mitigate incidental take might be better spent on engaging homeowners in making their homes more bird friendly. However, we can't forget the "elephant in the room". Industry's major impact is not the number of nests lost by summer land-disturbance rather the lost breeding productivity from landscape-level reduction of habitats for extended periods. As citizens who use the resources provided by industry understanding such effects is important if one is truly concerned about birds. Unfortunately, such issues often get lost in incidental take discussions and may be taking away conservation capital from effective land-use planning, setting of thresholds, and habitat protection. We must be cautious that perverse consequences do not result from focusing too narrowly on the issue of incidental take at the detriment of effective habitat planning. Examples of where this may be occurring will be discussed.

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**BIOGRAPHY:** Erin Bayne is a Professor in the Department of Biological Sciences at the University of Alberta. Erin received a B.Sc. (Hons.) from the University of Regina (1993), followed by an M.Sc. and Ph.D. from the University of Saskatchewan, done in collaboration with Environment Canada – Canadian Wildlife Service, in (1996 and 2000). This was followed by a Postdoctoral Fellowship at the University of Alberta, prior to accepting a faculty position there in (2004). Erin is an elected member of the American Ornithologists' Union (2003) and was made a Fellow in 2016. He has served as a councilor of the Society of Canadian Ornithologists/Société des Ornithologistes du Canada and is a collaborator on the Alberta Biodiversity Monitoring Institute, Integrated Landscape Management Group, and Boreal Avian Modeling Project at University of Alberta. As the author/co-author of 110 refereed publications and 20 government/industry reports, Erin's research interests lie mainly on the behavioral, population, and community responses of different wildlife species to human impacts with an emphasis on birds and how humans alter relationships between birds, their predators, and their prey. His current focus is on how to use autonomous recording unit to advance ecological monitoring in Alberta's oilsands region in the areas of sound triangulation and automated recognition.

# Don't Miss These Plenaries!



## Saturday Plenary: Dr. Michael Sorenson, Boston University

### Birds Behaving Badly and the Genetics of Speciation

Birds have long provided inspiration and insight to evolutionary biologists and have figured prominently in the development of ideas about species and speciation. Beginning with the analysis of mere snippets of each species' genetic code, molecular genetic data have been critical in advancing our understanding over the past few decades, but the field is entering a new and exciting phase; the burgeoning field of avian speciation genomics is allowing long-standing questions to be addressed in powerful new ways, while also stimulating new ideas and controversies. Within this context, there is value in examining unusual clades and species that may not conform to the typical patterns and processes of divergence. I review recent genetic analyses of brood parasitic birds, including apparent examples of genetic divergence without speciation and speciation without genetic divergence, and also summarize results for a previously unrecognized example of explosive diversification in which the phenotypic diversification of species may be based on the shuffling of ancestral genetic variation rather than the evolution of novel genetic variants. I will also comment on the implications of these results for the generality and limits of "trending topics" such as recurrent divergence due to background selection and mito-nuclear incompatibility.



**BIOGRAPHY:** Mike Sorenson is the Associate Dean of the Faculty for the Natural Sciences in the College of Arts and Sciences at Boston University, and previously served as Chair of the BU Biology Department. He earned his Ph.D. in Ecology, Evolution and Behavior from the University of Minnesota in 1990, before conducting postdoctoral research at the Smithsonian Institution and University of Michigan. An elected Fellow of the American Ornithologists' Union, Mike is a behavioral and evolutionary ecologist and population geneticist known for using molecular genetic and genomic data to investigate the evolution of brood parasitic birds (species that reproduce only by parasitizing the parental care behavior of other species). Recent work has focused on the brood parasitic indigobirds of Africa, in which learning and mimicry of host songs facilitates an evolutionary process of speciation by host shift, and on the speciation genomics of a group of 12 *Lonchura munia* species in Papua New Guinea and northern Australia that represent an extraordinary example of rapid evolutionary diversification. Together with colleagues, Mike has also recently examined the genetic basis of host specific adaptation in several different groups of brood parasitic birds, and has worked on the evolutionary ecology of bat populations, including those affected by white-nose syndrome, an emerging fungal pathogen that has devastated bat populations in eastern North America.



# Plenaries: Early Career Awardees



**Wednesday** at 3:30 pm Kellogg Center Auditorium

**Dr. Stephanie LaZerte, Thompson River University**

2017 is the inaugural year for the SCO-SOC's Early Career Researcher Award. The award honours fledgling ornithologists - in academia, industry, non-government or government agencies - that show strong potential for future leadership in Canadian ornithology. This year's award was presented to Stefanie LaZerte.



## **A tale of birds and data: How R saved a behavioural ecologist**

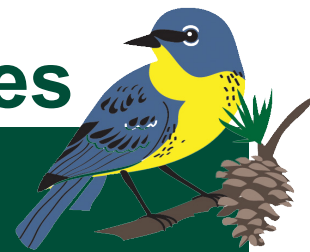
Through studies on chipmunks, chickadees, sparrows, and finches, I have investigated animal activity, communication, and movement, and even have had the occasional foray into geomorphology. Although seemingly having nothing in common, the thread that links these topics is the complexity of the underlying data. Some projects simply had too much data, some had 'hidden' data, which needed to be extracted. These types of projects are becoming ever more common; as researchers, we have greater and more powerful techniques for data collection including physical tools (telemetry, GPS, Geo-Locators, RFID, Automated Recording Units, etc.) as well as social tools (citizen science). The conundrum that faces behavioural ecologists, accustomed to small sample sizes, is then how to manage and analyze these data: with great data comes the need for great management. While there are many tools for data management,

R is one that has been growing in popularity. However, although R workshops and classes are cropping up everywhere, most users seem to focus on R for statistics, as opposed to R for data, and there often seems to be no middle ground between spreadsheet users and programming gurus. In this talk I will discuss my experiences with research in behavioural ecology and how using R software and programming language helped me address interesting questions that may otherwise have been out of my reach.

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**BIOGRAPHY:** Stefanie (Steffi) LaZerte is an independent consulting biologist and R programmer, currently living in Brandon, Manitoba. Steffi received a B.Sc. in animal behaviour from the University of Toronto (2007), an M.Sc. in behavioural ecology from McGill University (2010) and an interdisciplinary Ph.D. in natural resources and environmental studies from the University of Northern British Columbia (2015). Her research interests focus on how humans influence the behaviour of animals, particularly through urbanization. Steffi's PhD work addressed the effects of urbanization and noise on chickadee communication and her post-doctorates have focused on the development of an R package for tracking animal movements between RFID (radio frequency ID) loggers in urban environments. Steffi is also interested in the use of citizen science and R programming as tools to increase the quantity and quality of data in the field of behavioural ecology. As a way to encourage use of these tools, she teaches R to help researchers unfamiliar with large datasets become more comfortable with data management. She won the 2012 Baillie Award from the SCO-SOC for her student research, as well as the top Student Presentation Award at the SCO-SOC's 2013 meeting in Winnipeg.

# Plenaries: Early Career Awardees



**Friday** at 8:00 am in Wells 115

**Dr. Riccardo Ton, University of Montana**

The James G. Cooper Young Professional Award recognizes two early-career ornithological researchers (up to 3 years post-Ph.D.) for their outstanding contributions in any field of ornithology. This year's winners are Nancy Chen and Riccardo Ton.



## **Proximate effects of temperature versus evolved intrinsic constraints for embryonic development times in songbirds**

The relative importance of intrinsic constraints imposed by evolved physiological trade-offs versus the proximate effects of temperature for interspecific variation in embryonic development time remains unclear. Understanding this distinction is important because slow development due to evolved trade-offs can yield phenotypic benefits, whereas slow development from low temperature can yield costs. We experimentally increased embryonic temperature in free-living tropical and north temperate songbird species to test these alternatives. Warmer temperatures consistently shortened development time without costs to embryo mass or metabolism. However, proximate effects of temperature played an increasingly stronger role than intrinsic constraints for development time

among species with colder natural incubation temperatures. Long development times of tropical birds have been thought to primarily reflect evolved physiological trade-offs that facilitate their greater longevity. In contrast, our ~~results indicate a much stronger role of temperature in embryonic development time than currently thought.~~

**BIOGRAPHY:** Riccardo Ton started his first ornithological experiments in the garden of his grandma in Italy at the age of 6. Later he explored the major migratory flyways in the alps north of Venice while getting his M.S. at the university of Padova. He finally received his Ph.D. in 2016 from the University of Montana working with Tom Martin. His research examined the effects of metabolism and temperature on embryonic development times and post-natal growth rates in temperate and tropical songbirds. His rooted passion for field biology took him to conduct his research in sites all over the world including U.S.A., Venezuela, Malaysia and South Africa. Riccardo is also actively involved in conservation projects that aim to restore the traditional rural habitats of his region that are quickly lost to urbanization and changes in agricultural practices. His work includes first-authored publications in Functional Ecology and Scientific Reports.



# Plenaries: Early Career Awardees



**Friday** at 8:00 am in Wells 115

**Dr. Nancy Chen, University of California, Davis & Cornell University**

## Evolutionary genomics of a pedigreed wild population

Recent studies have demonstrated evolution on ecological timescales in a number of different organisms. Studying contemporary evolution is the only way to directly test many fundamental questions in evolutionary biology, and understanding the evolutionary processes that shape patterns of genetic variation in short timescales is directly relevant for conserving declining species in the face of rapid environmental change. While much attention has been given to phenotypic evolution on short timescales, investigations of short-term evolutionary dynamics at the genomic level are challenging and rare. A powerful approach for studying short-term evolution of natural populations is to combine evolutionary genomics with long-term demographic and pedigree data. Here, we investigate the genetic basis of rapid evolution using a 25-year genomic, phenotypic, and pedigree dataset in the Florida Scrub-Jay



(*Aphelocoma coerulescens*), an iconic species on the U. S. Endangered Species List. A population of Florida Scrub-Jays at Archbold Biological Station has been studied since 1969, resulting in full records of individual lifespans as well as annual fecundity and lifetime fitness measures for thousands of individuals on a 12-generation pedigree. We used custom Illumina Beadchips to genotype every individual in our study population over the past two decades (3,838 individuals total) at 15,416 genome-wide SNPs. We used gene dropping to model drift on the known pedigree and identify SNPs whose frequency dynamics were driven by selection. We then tested for selection acting on specific life-cycle stages by modifying existing selection component analysis frameworks to take full advantage of exhaustive population sampling. We identified a number of loci that clearly exhibited male gametic selection, sexual selection, and viability selection. By combining sensitive pedigree-based inferences of net selection with fine-scale dissection of selection components, this study provides a detailed assessment of the role of selection in perturbing allele frequency dynamics in a rapidly declining population.

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**BIOGRAPHY:** Nancy Chen is currently an NSF Postdoctoral Research Fellow with Graham Coop at UC Davis and will be starting as an Assistant Professor at the University of Rochester in July 2018. Before joining the Coop lab, Nancy was a Postdoctoral Research Associate at the Cornell Lab of Ornithology and a Ph.D. student with Andy Clark and John Fitzpatrick. Her research seeks to understand the genomic basis of contemporary evolution in natural populations by combining genomic data with long-term demographic and pedigree data. Nancy's dissertation research concentrated on elucidating the genomic consequences of declining population size and developing bioinformatics tools for analyzing next-generation sequencing data in non-model organisms. Nancy is also interested in promoting diversity in the sciences. She organizes a women in science discussion group at UC Davis and is one of the organizers of the symposium Birds of Different Feathers: Increasing Diversity in Ornithology to be held during this year's meeting.

# Plenaries: Early Career Awardees



**Friday** at 8:00 am in Wells 115

**Dr. Michael Butler, Lafayette College**

**The Ned K. Johnson Young Investigator Award recognizes outstanding and promising work by a researcher early in his or her career (up to 5 years post-Ph.D.) in any field of ornithology. The 2017 award is given to Dr. Michael Butler.**

## **Physiological underpinnings of avian ecology**

Some of the most important breakthroughs in ornithology occur when scientists from different disciplines tackle phenomena from multiple vantage points. Here, I explore how ecological factors such as activity patterns, foraging, sexual selection, and signaling are informed by examining physiological processes. Specifically, I examine how variation in circulating nutrient levels, immune response, and oxidative physiology contributes to our understanding of behavioral ecology and other ecological patterns. For example, female mallards that circulate higher levels of antioxidants lay eggs with shells that are more chromatic, and these more colorful eggs contain more antioxidant-rich yolks, suggesting a signaling role for eggshell coloration. However, I also address a challenge experienced by many eco-physiologists; physiological data are frequently difficult to interpret and sometimes produce counter-intuitive conclusions.



For example, in work with European starlings, I found that more chromatic eggshells were associated with yolks that were actually less antioxidant-rich, a result in direct opposition to my work with mallards. To reconcile these and other such seemingly contradictory results, I explore the concept of hormesis, which provides a compelling framework for interpreting many such discrepancies. A hormetic approach posits that small challenges confer a net fitness benefit relative not only to high-intensity stressors, but also relative to no stressor at all. After examining multiple data sets, it seems likely that hormesis is a potentially underappreciated phenomenon, and I explore several avenues for future investigation.

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**BIOGRAPHY:** Michael Butler is currently an assistant professor at Lafayette College in Easton, Pennsylvania. Mike received his B.A. in Biology and Physics from Bowdoin College (2002), working heavily with Amy Johnson and Nat Wheelwright, his M.S. in Raptor Biology from Boise State University (2006; Al Dufty, Jr.), and his Ph.D. in Biology from Arizona State University (2012; Kevin McGraw). His research efforts fall into a wide range of categories, including biomechanics, ecoimmunology, physiology, and behavioral ecology, driven by an underlying research interest in examining how animals meet challenges posed by the environment. To investigate these topics, Mike has performed studies with species as diverse as mallards, Savannah sparrows, Gila monsters, American kestrels, corn snakes, great-tailed grackles, European starlings, chameleons, house finches, and on one occasion – sharks. In addition to research, Mike enjoys teaching undergraduates, and training the next generation of scientists. Mike has nearly 40 peer-reviewed publications, and received the Aaron O. Hoff Superior Teaching Award in 2015.

# Birds of Different Feathers: Increasing Diversity in Ornithology



**Wednesday** at 1:30 pm in Kellogg Center Auditorium

## Organizers:

**Nancy Chen, Scott Taylor, Nandadevi Cortes-Rodriguez, Sara Kaiser and Kevin Omland**

Promoting the recruitment and retention of underrepresented groups in science is important. This symposium will feature four speakers from established programs aimed at increasing diversity in STEM at various career stages (undergraduate, graduate, postdoc, faculty, and non-academic biologists), followed by a breakout session during which attendees brainstorm concrete steps we can take to increase diversity and inclusion in our fields. Increasing diversity in ornithology is a key goal of the current AOS leadership, and ideas generated during this symposium will be considered and implemented by the newly formed AOS Diversity and Inclusion Committee.



## AOS diversity and inclusion: Attracting and retaining a broader range of ornithologists for the 21st century

**Kevin E. Omland, University of Maryland, Baltimore County (UMBC),** Chris Balakrishnan, Eastern Carolina University; Karl Berg, University of Texas-Rio Grande Valley; Susanna Campbell, University of Michigan; Nancy Chen, UC Davis; Nanda Cortes-Rodriguez, Ithaca College; Scott Edwards, Harvard; Mark Hauber, University of Illinois & CUNY; Susannah Lerman, USFS, University of Massachusetts; Irene Liu, University of Maryland, College Park; Viviana Ruiz-Gutierrez, Cornell; Kim Sullivan, Utah State; Scott Taylor, University of Colorado; Sara Kaiser, Smithsonian Migratory Bird Center

Last year at the NAOC meetings, President Steve Beissinger and the AOS Council initiated a new effort to increase the diversity of the AOS to help

secure the long-term viability of our mission and organization. Furthermore, developing a broader constituency for birds and environmental conservation will help ensure a sustainable future for our planet. Kevin Omland was named chair of the Ad-Hoc Committee on Diversity and Inclusion ("Diversity Committee"). The selected committee includes a range of ages, career tracks, genders, orientations, ethnicities, etc. Although our societies became more gender balanced in the 1990s, in recent years, membership became older and more male. This trend does not bode well for the future of the AOS. The Diversity Committee has embarked on several pilot projects including efforts to attract more diverse students to meetings, to help all members feel welcome and valued, and to help retain more women in ornithological careers and the AOS. The Committee is tasked to lead this effort, but to be successful, diversity and inclusion must become important goals of the whole organization: from students to established scientists to leadership. The Diversity Committee hopes that all AOS committees can develop strategies within each committee's mission to directly address diversity challenges. We have a new Society, and we find ourselves at a tenuous and crucial moment for ornithology and for science more broadly. Becoming more relevant to a greater diversity of students, researchers and citizens is paramount.

**BIOGRAPHY:** Dr. Kevin Omland, Professor of Biological Sciences at the University of Maryland, Baltimore County, currently chairs the AOS Committee on Diversity & Inclusion, and serves on the AOS Council. Dr. Omland received his B.A. from Dartmouth College and Ph.D. from the University at Albany, SUNY, and after postdoctoral fellowships at Duke University, University of Minnesota, and the Smithsonian National Zoological Park, he has been a faculty member of the University of Maryland, Baltimore County since 2000. His research focuses on understanding



# Birds of Different Feathers: Increasing Diversity in Ornithology



recent speciation in birds, reconstructing population and species relationships, and studying plumage and song evolution in ducks, New World orioles, and ravens. He mentors students in avian conservation genetics, molecular phylogenies, divergence population genetics, and character evolution. Dr. Omland has served on the University of Maryland, Baltimore County's "STRIDE" committee for faculty diversity since 2015. He has led the AOS Diversity and Inclusion efforts since 2016. Honors include a Visiting International Scholarship to the Australian National University and election to Fellow of the AOS in 2009.



## Fish and Wildlife Service Diversity and Inclusion Initiatives

*Rickey Siggall, U.S. Fish and Wildlife Service*

The U.S. Fish and Wildlife Service (Service) has executed initiatives and strategies to attract and retain diversity in its workforce. The Service's representative speaking at the Conference will elaborate and highlight the specifics of those initiatives and strategies. The Service has implemented a Five-Year Strategic Diversity and Inclusion Implementation Plan (Plan) FY 2015- 2019, which identifies the highest priorities and essential actions to assist the Directorate, project leaders, managers and supervisors, and employees in their efforts to build and maintain a diverse, inclusive, and highly qualified workforce. Leadership's commitment and accountability across the organization is the key to its success. The Plan has four strategic goals to increase the diversity. The first goal is to Build Diversity as a Core Value. To attain this goal, senior leadership and all employees must

be involved. The second goal is to Establish Partnerships that will assist the Service in meeting its recruitment goals. This requires managers to develop relationships with key personnel at identified organizations to attract minorities to conservation and biology careers. The third goal is to Conduct Targeted Recruitment to reach all segments of the population where the talent exists. The fourth goal is to Maintain a Highly Skilled and Diverse Workforce through Talent Management. This requires the Service to be a deliberately developmental organization in which all employees can reach their full potential.

**BIOGRAPHY:** Mr. Rickey Siggall was named the Deputy Director, Office of Diversity and Inclusive Workforce Management, U.S. Fish & Wildlife Service (Service), Department of the Interior on June 7, 2015. He is responsible for overseeing, and evaluating the day-to-day activities of the equal employment opportunity (EEO) programs of the Service and developing and implementing Service-wide policies, procedures, guidelines, and standards relating to EEO and Diversity Programs including Affirmative Employment, Special Emphasis, discrimination complaints processing and conflict/dispute resolution. Most recently Mr. Siggall served as the Deputy Director, Equal Employment Opportunity Programs, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center. In this position, Mr. Siggall developed and implemented EEO programs formulated, planned, coordinated, managed, and directed development and implementation of affirmative action policies, goals, objectives, procedures, and programs. Additionally, he conducted studies and analysis of management practices, organizational structures, and employment patterns, within specific career fields to determine their impact on EEO and upward mobility goals.

Mr. Siggall has received numerous military and civilian awards including, the Director's Pinnacle Award for Outstanding Leadership, the Distinguished Leadership Award (2nd Award), and the Major General Aubrey "Red" Newman Leadership Award. He holds a Bachelor in Business Administration from Campbell University.



# Birds of Different Feathers: Increasing Diversity in Ornithology



## Improving Undergraduate Diversity and Training of Future Ornithologists

*Corey Welch, Iowa State University*

There is a growing body of literature demonstrating the barriers (and solutions) to improve the successful selection, retention, and development of underrepresented (UR = low income, minority, and first generation) undergraduate students in ecology and evolutionary biology. A summary of recommendations and examples of successful programs will be highlighted including undergraduate research training conferences (SACNAS, AISES, and ABRCMS) will be presented as an under-utilized pool for recruitment and training of UR undergraduate and graduate students. Time will be given for questions from the audience to discuss ways to broaden the pool of future ornithologists.



**BIOGRAPHY:** Dr. Corey Welch is Director of the STEM Scholars Program at Iowa State University. His career goal is to diversify who succeeds in science, thereby benefiting both STEM disciplines and our larger society. Dr. Welch is a member of the Northern Cheyenne Tribe and from a first generation, low income background. He is passionate about diversifying field biology, museum based research, and improving retention of underrepresented populations from undergraduates to the professoriate.

Dr. Welch's biology training is in ecology and evolution with an emphasis on mammals and birds. He was co-advised by Scott Edwards at the University of Washington. Additionally, he was a biology lecturer at Haskell Indian Nations University in Lawrence, KS and worked as a program coordinator for the UC Berkeley Biology Scholars Program. Lastly, he is on the National Board of Directors for the Society for the Advancement of Hispanics/Chicanos and Native Americans in Science (SACNAS).



## Approaches to diversifying the faculty

*Deborah Goldberg, University of Michigan*

Diversifying the faculty of colleges and universities is a critical task, both as a moral imperative and because of the advantages to our diverse student bodies. This is especially urgent for STEM disciplines, which tend to be even less diverse than other fields. I describe two programs at the University of Michigan that focus on diversifying the STEM faculty, both nationally and at the institution. NextProf is a workshop to encourage talented scientists and mathematicians with a demonstrated commitment to diversity to strengthen their ability to pursue an academic career. This annual three-day event focuses on how the search process works, building a research program, and developing a teaching and mentoring philosophy, as well as creating a supportive network of peers and mentors for participants. Started in the College of Literature, Science, and the Arts in 2015, more than 120 scholars have participated to date. A longer-term program is STRIDE, which conducts training on implicit bias and stereotype threat, as well

# Birds of Different Feathers: Increasing Diversity in Ornithology



as shares best practices to mitigate their impact and attract and recruit a diverse faculty. A part of the U ADVANCE Program, the STRIDE workshops is developed by a group of faculty, including many in STEM, who read the social science literature on these issues and decide how best to present to their peers. All faculty on search committees in the liberal arts college and the engineering college at UM are required to attend a STRIDE workshop at least every three years.

**BIOGRAPHY:** Dr. Deborah Goldberg received her B.A. from Barnard College in 1975 and her Ph.D. from the University of Arizona in 1980 and has been on the faculty at the University of Michigan since 1983, where she is an Arthur F. Thurnau Professor and the Elzada U. Clover Collegiate Professor of Ecology and Evolutionary Biology. Professor Goldberg focuses on processes that underlie patterns in plant community dynamics, structure, and function and their response to global change drivers, including climate change, nutrient deposition, and invasive species. Dr. Goldberg has also worked actively as a faculty member and administrator to make the science community look more like the general population by increasing recruitment and improving the climate for under-represented groups. As a department chair, she started the Frontiers Masters Program to recruit students from under-represented groups to EEB in a fully-funded Masters program and prepare them for top-ranked Ph.D. programs in EEB. She has served on the STRIDE Committee of the ADVANCE project and works with NextProf Science. She also founded the M-Bio Academy, is co-director of the broader M-STEM Academies to support students from under-represented groups in all STEM majors and increase their retention to graduation and beyond, and is the director of the Authentic Research Connections project to increase research experiences in introductory science courses.

Honors include election as Fellow of the American Association for the Advancement of Science, Fellow of the Ecological Society of America, and Vice President for Science for the Ecological Society of American, along with the Sarah Goddard Power Award from the Women's Caucus of the University of Michigan, the Harold R. Johnson Diversity Award, and the Distinguished Diversity Leaders Team Award from the University of Michigan.



# Audubon

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**50**

states in the US

**138**

countries around the world

**50,000+**

MSU students




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and Intercultural Initiatives

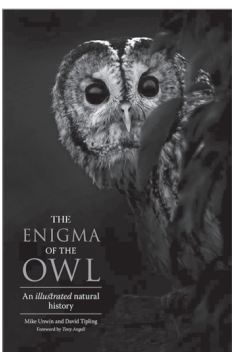
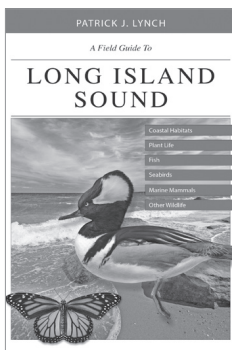
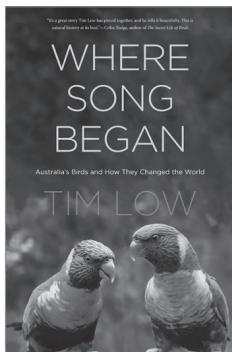
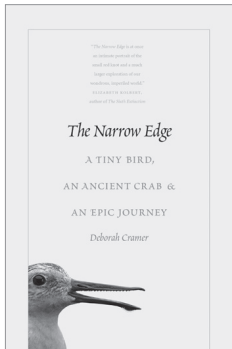


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**High and Dry**  
*Meeting the Challenges of the World's Growing Dependence on Groundwater*  
**William M. Alley and Rosemarie Alley**

**The House of Owls**  
**Tony Angell**  
Foreword by Robert Michael Pyle  
Paper

**The Aliens Among Us**  
*How Invasive Species Are Transforming the Planet—and Ourselves*  
**Leslie Anthony**

**The Origins of Everything in 100 Pages (More or Less)**  
**David Bercovici**  
Paper

**Carnivore Minds**  
*Who These Fearsome Animals Really Are*  
**G. A. Bradshaw**

**The Structure and Dynamics of Human Ecosystems**  
*Toward a Model for Understanding and Action*  
**William R. Burch, Jr., Gary E. Machlis, and Jo Ellen Force**

**House of Lost Worlds**  
*Dinosaurs, Dynasties, and the Story of Life on Earth*  
**Richard Conniff**  
Paper

**The Narrow Edge**  
*A Tiny Bird, an Ancient Crab, and an Epic Journey*  
**Deborah Cramer**  
Paper

**Our Senses**  
*An Immersive Experience*  
**Rob DeSalle**  
Illustrated by Patricia J. Wynne

**Fishing**  
*How the Sea Fed Civilization*  
**Brian Fagan**

**A Meeting of Land and Sea**  
*Nature and the Future of Martha's Vineyard*  
**David R. Foster**  
Illustrations by Brian R. Hall  
Photography by David R. Foster

**13.8**  
*The Quest to Find the True Age of the Universe and the Theory of Everything*  
**John Gribbin**  
Paper

**The Baltimore School of Urban Ecology**  
*Space, Scale, and Time for the Study of Cities*  
**J. Morgan Grove, Mary L. Cadenasso, Steward T. A. Pickett, Gary E. Machlis, and William R. Burch, Jr.**  
Foreword by Laura A. Ogden  
Paper

**The Great Apes**  
*A Short History*  
**Chris Herzfeld**  
Translated by Kevin Frey  
Foreword by Jane Goodall

**Hubbard Brook**  
*The Story of a Forest Ecosystem*  
**Richard T. Holmes and Gene E. Likens**

**Sustaining Lake Superior**  
*An Extraordinary Lake in a Changing World*  
**Nancy Langston**

**Thirty-Eight**  
*The Hurricane That Transformed New England*  
**Stephen Long**  
Paper

**Where Song Began**  
*Australia's Birds and How They Changed the World*  
**Tim Low**

**A Field Guide to Long Island Sound**  
*Coastal Habitats, Plant Life, Fish, Seabirds, Marine Mammals, and Other Wildlife*  
**Patrick J. Lynch**  
Paper

**Mapping the Heavens**  
*The Radical Scientific Ideas That Reveal the Cosmos*  
**Priyamvada Natarajan**  
Paper

**The First Domestication**  
*How Wolves and Humans Coevolved*  
**Raymond Pierotti and Brandy R. Fogg**

**The Mathematics Lover's Companion**  
*Masterpieces for Everyone*  
**Edward Scheinerman**

**Against the Grain**  
*A Deep History of the Earliest States*  
**James C. Scott**

**Stepping in the Same River Twice**  
*Replication in Biological Research*  
Edited by Ayelet Shavit and Aaron M. Ellison  
Foreword by W. John Kress

**The Long, Long Life of Trees**  
**Fiona Stafford**  
Paper

**Thoreau's Animals**  
**Henry David Thoreau**  
Edited by Geoff Wisner  
Illustrated by Debby Cotter Kaspari

**The Enigma of the Owl**  
*An Illustrated Natural History*  
**Mike Unwin and David Tipling**  
Foreword by Tony Angell



# Early Professional Mini-Talk Symposium



**Wednesday** at 4:00 pm Brody 134-138 & Kellogg Center Big Ten A

The Early Professionals Committee is hosting the 4th Annual EARLY PROFESSIONALS MINI-TALK SYMPOSIUM AND EARLY PROFESSIONALS SOCIAL designed to highlight the exciting research performed by professionals in the beginning stages of their careers (i.e., those who are no longer students but still in the early stages of their careers). This is a lively and fast-paced event, which has become increasingly popular. Unlike the lightning talks in previous years, we have changed the format to a “3-minute thesis”-type presentation. Participants are limited to one slide consisting of one image and a “tweet” style statement summarizing them and their research (i.e., no more than 140 characters). We will also leave ~2 minutes for one question. The image can be a photo, figure, or piece of art. The idea here is to make the Ornithologist the focus. What are they passionate about, what makes them tick as a scientist, how did they get where they are, and where are they headed? Following the talks there will be an Early Professional Social, a chance to meet with the participants and other early career and senior ornithologists (registration required).

To give all attendees the opportunity to learn about these early career researchers, the symposium is a stand-alone event, which takes place on Wednesday, August 2, at 4 pm. Please join us in Brody 134-138 for the symposium and then in the Kellogg Center Big Ten A room for the reception that follows.

**Organizers:** Sara Kaiser, Smithsonian Institution; Chris Tonra, The Ohio State University; Emma Grieg, Cornell Lab of Ornithology; and Scott Taylor, University of Colorado, Boulder

**Moderator:** Chris Tonra

## **This year's symposium:**

- Introduction: Sara Kaiser, Chris Tonra, Emma Grieg, and Scott Taylor
- Kristen Covino, Canisius College
- Allison Johnson, University of Chicago
- Michael Hallworth, Smithsonian Conservation Biology Institute - Migratory Bird Center
- Erica Stuber, University of Nebraska-Lincoln
- Rachel Sturge, University of Toronto, Scarborough
- Auriel Fournier, Mississippi State University
- Christine Magliger, University of Windsor
- Natalie Wright, University of Montana
- Nicholas Mason, Cornell University
- Special Guest (closing remarks/reflections)
- Sara Kaiser (Early Professional Social)

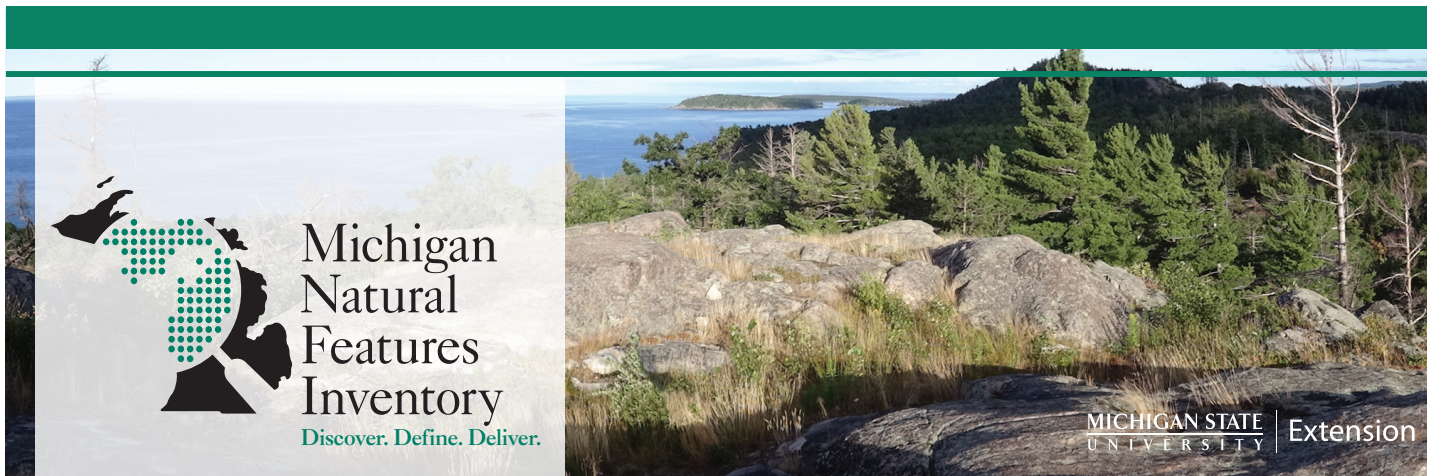
# Undergraduate Symposium



## Friday Morning & Afternoon Sessions - Kellogg Center 103AB

### Organizer and session chair: Melissa Bowlin

We are pleased to welcome more than 30 undergraduate researchers who are presenting their research at this year's meeting! In acknowledgement of just some of the great work being done by these beginning scientists, we're holding a special session during which 10 undergraduates will present their research. We encourage you to attend these talks that explore diverse aspects of the biology of birds, including digestion and diet, preen gland secretions, flight patterns, and coloration. Additional talks by undergraduate students will be given throughout the scientific program; please extend your support and find out about the work of these researchers!



# Workshops and Roundtables



Pre-conference workshops will be held July 31 and August 1 for attendees. Also on the schedule are workshops offered by the Ornithological Council and Wildlife Acoustics scheduled during the conference, and roundtables to round out the week. Summaries of workshops and roundtables are provided here; for details, visit <http://aossco2017.fw.msu.edu/workshops/>.

## Monday Brody

### Professional development for current and prospective graduate students

*Instructors: Scott Lanyon, University of Minnesota*

*Location: Brody 134, 1-5 pm*

To provide current and prospective graduate students with advice on how to get the most out of their graduate education. Topics include: Advisor/Advisee relationships; Grant proposal writing tips; NSF Graduate Research Fellowship proposal writing tips; Time Management; and Career Planning.

## Tuesday Brody

### Coordinated landbird banding during migration in the Midwest

*Instructors: Mark Shieldcastle Amber Roth, Julie Shieldcastle, Midwest Migration Network*

*Location: Brody 136, 8-5 pm*

The Midwest Migration Network will provide training for all aspects of the program to establish systematic field data collection and to store data for researchers studying life cycle modeling of landbirds. Modules of the training program will include but not be limited to Network Participation; Bird Banding Permit Regulations; Sample Design; Mist Net Operation; Bird Safety; Aging Techniques; Fat Classing; Fieldwork Efficiency; Auxiliary Data Collection (ex. Feathers); Habitat Data; Point Counts; and Daily List Completion.

### Drone technology for ornithologists

*Instructors: David M. Bird, McGill University, and Andrew Wilson, Gettysburg College*

*Location: Brody 134, 1 – 5 pm*

The overall aim of this workshop is to introduce and familiarize anyone interested in using drones for their ornithological studies and/or bird conservation to the world of drone technology. We expect to cover the following: Introduction to UAVs or drones; Who is currently using them in ornithology and other wildlife studies and why; Our own experiences in using drones to study and conserve birds and what we have learned so far; Current limitations to using drones, e.g. weather, terrain, regulations, international travel, etc.; Future uses of drones for ornithology, including teaching.

### Programming, data management, and graphing in R

*Instructors: Auriel Fournier, Mississippi State University, and Matt Boone, Kauai Endangered Seabird Recovery Project*

*Location: Brody 175, 8-5 pm*

Our goal is to help our learners go from the basic use of R, reading in data, etc. to being able to understand the language of R in such a way that they can use R to automate daily tasks, manage their data in a reproducible framework and make publication-ready graphs all with scripts to help support open and reproducible work flows.

## Wednesday Brody

### A public policy primer for ornithologists

*Instructors: Ellen Paul, Ornithological Council and Jeff Walters, Virginia Tech*

*Location: Brody 220 (private dining room; participants can use meal ticket and eat lunch at workshop), 12-1:30 pm*

This one-hour presentation will help ornithologists to understand how they can engage effectively in the formulation of government policies of interest to them. Specific topics will include the legislative and regulatory processes and opportunities for ornithologists to voice their views both as individuals and as scientists, directly and through scientific societies and conservation organizations. Special attention will be given to the AOS Science Arbitration Committee (Jeff Walters).

# Workshops and Roundtables



## Thursday Brody

### Permits – how to pass GO!

*Location: Brody 220 (private dining room; use meal ticket & eat lunch at workshop), 12 – 1:30 pm*

*Instructors: Ellen Paul, Ornithological Council*

Virtually every ornithological research project requires one or more permit from the federal and state governments. Are you *\*really really sure\** you know which permits you need and how to get them? Whether you need a refresher course or you are fairly new to permit requirements, this session will help you avoid the stress and hassle associated with permits. The session will cover permits needed under the Migratory Bird Treaty Act (including banding, scientific collecting, special purpose, and import/export), Endangered Species Act, Bald and Golden Eagle Protection Act, CITES, and Wild Bird Conservation Act, along with some murky areas such as the use of drones and the incidental take of MBTA or ESA species that are not covered under the permit. State permits will be covered.

### Wildlife Acoustics Passive Acoustic Monitoring workshop

*Instructor: Mona Doss, VP of Business Development, Wildlife Acoustics*

*Location: Brody 136, 5 – 6 pm*

Acoustic recorders provide a non-invasive and cost-effective technique to assess species biodiversity within a region. This will be a hands-on workshop specifically focused on the Wildlife Acoustics Song Meter SM4 passive acoustic recorder. Participants will learn how to set up the SM4 recorder to record in the field as well as helpful deployment and recording tips and how to configure multiple units quickly by using the free SM4 configurator software.

## Friday Brody

### Q&A about using social media for science

*Leaders: Auriel Fournier, Jordan Rutter and Nicole Wood*

*Location: Brody 136, 5 – 6:30 pm*

As a follow-up to the symposium earlier in the conference, the three organizers will discuss how to use social media as a scientist and answer questions from those interested in social media at all levels as we look forward towards what steps can be taken next by all conference participants so they benefit from their social media use.

### The Avian Microbiome

*Leader: Sarah Hird*

*Location: Brody 134, 5 – 6:30 pm*

The microbiome (or all the microbes living in a particular place) is a dynamic and important aspect of avian biology. Recent research, facilitated by quickly advancing methodologies, is revealing the myriad ways the microbiome affects host health, wellness and fitness. Unfortunately, ~90% of published microbiome research has been conducted on mammals, which are fundamentally different from birds in many ways that directly affect the microbiome. The unique attributes of Aves make them particularly fascinating microbial hosts. To really understand the evolution and biology of birds, we must incorporate microbiome research into our studies. The purpose of this roundtable is to discuss ongoing or potential microbiome projects, methodological concerns and future plans for collecting and comparing microbiome data in wild birds.



# Symposia



Each day in addition to the general sessions, two concurrent symposia organized by members of the ornithological community are offered.

All symposia will be held in either the Kellogg Center (KC) Auditorium or Room 112 in the Brody Building at the following times:

- Morning session: 10:30 – 12:00 pm
- Early afternoon session: 1:30 – 3:00 pm
- Late afternoon session: 3:30 – 5:00 pm

Please see the Program-At-A-Glance (p. 42) for details regarding presentations in symposia. Abstracts of these presentations can be found in the Oral Presentations section of the online Abstract Booklet at <http://aossco2017.fw.msu.edu/abstract-book/>.

## Wednesday Kellogg Center Auditorium or Brody 112

### **S1: #TheTweetingBird: Using science communication via social media to benefit your research and your career**

*Organizers: Auriel Fournier, Mississippi State University, Jordan Rutter, American Ornithological Society, and Nicole Wood, Central Michigan University*

*KC Auditorium, Morning session*

The goals of this symposium are to teach scientists of all science communication (aka scicomm) experience levels which social media apps are available, how to use these apps, and how to apply the use of these apps to benefit multiple facets of their careers. By the end of the symposium, audience members will have a new knowledge base that they will be able to start implementing immediately.

### **S2: The Kirtland's Warbler: Full life-cycle findings and application to conservation**

*Organizers: Dave Ewert, The Nature Conservancy, and Nathan Cooper, Smithsonian Migratory Bird Center*  
*Brody 112, Morning and early afternoon sessions*

The Kirtland's Warbler is one of the rarest, yet best studied migratory passerines in North America. The one day symposium will provide a comprehensive full life-cycle review of the ecology, demography, distribution, and conservation of the Kirtland's Warbler. The first speaker will provide an overview of the natural history and conservation of the Kirtland's Warbler. Subsequent speakers will focus on aspects of carry-over effects, management on the breeding grounds, connectivity and migration, winter ecology, population viability analysis, climate change interactions, and projected future work with Kirtland's Warblers. The symposium will be complemented by a one day field trip to the Kirtland's Warbler breeding grounds in Michigan's northern lower peninsula.

### **S3: Birds of different feathers: increasing diversity in ornithology**

*Organizers: Nancy Chen, University of California Davis, Scott Taylor, University of Colorado Boulder, Nandadevi Cortes-Rodriguez, Ithaca College, Sara Kaiser, Smithsonian Institution, and Kevin Omland, University of Maryland, Baltimore County*

*KC Auditorium, Early afternoon session*

Promoting the recruitment and retention of underrepresented groups in science is important. This symposium will feature speakers from established programs aimed at increasing diversity in STEM at various career stages (undergraduate, graduate, postdoc, faculty, and non-academic biologists), followed by a breakout session during which attendees brainstorm concrete steps we can take to increase diversity and inclusion in our fields. Increasing diversity in ornithology is a key goal of the current AOS leadership, and ideas generated during this symposium will be considered and implemented by the newly formed AOS Diversity Committee.



## Thursday Kellogg Center Auditorium or Brody 112

### **S4: Best tools for studies of small landbird movements in the golden age of bio-logging**

*Organizer: Emily McKinnon, University of Windsor*

*KC Auditorium, All Day*

The field of movement ecology is rapidly expanding as tracking technology is becoming simultaneously more sophisticated and light-weight. For small migratory landbirds, this has fueled an exponential increase in our understanding of migratory connectivity, migration timing, and year-round conservation needs for species at risk. There are now more types of tracking technology available than ever before, and a need for a synthesis of what tracking tools are best applied to which questions, and to which species. The talks in this symposium will be from a broad range of researchers at the forefront of the application of these technologies, who will share their expertise in the use of various tags, analysis techniques, as well discuss any impacts on study species, to inform future directions in the study of movement ecology of small landbirds.

### **S5: Agriculture, ecosystem services, and avian conservation**

*Organizer: Catherine Lindell, Michigan State University*

*Brody 112, Morning session*

Food production activities cover one fourth of the Earth's land surface. Investigations that simultaneously explore how birds affect agricultural systems and how agricultural systems affect birds are key to addressing the challenge of maintaining and increasing populations of bird species that provide ecosystem services important to agricultural productivity. This symposium presents recent research relevant to this challenge. The specific objectives of the symposium are to 1) present some of the latest techniques available to document ecosystem services provided by birds; 2) provide attendees with recent information about methods to simultaneously evaluate services and disservices by birds and calculate economic costs and benefits; 3) discuss the interplay of ecosystem service provisioning by birds and bird conservation.

### **S6: Advances in estimating patterns of bird abundance and distributions at relevant spatial and temporal scales**

*Organizers: Viviana Ruiz-Gutierrez, Cornell Lab of Ornithology, John Sauer, Cornell Lab of Ornithology, and Steve Kelling, USGS Patuxent Wildlife Research Center*

*Brody 112, Early and late afternoon sessions*

Bird conservation in the anthropocene will require innovative approaches in both science and technology aimed at improving our current understanding of bird populations. This symposium provides an overview of advances and challenges surrounding how to best monitor bird populations, and describes frameworks for collecting and integrating multiple sources of information at broad spatial and temporal scales. In addition, we provide guidelines and examples of how to apply and improve upon current approaches for monitoring bird populations, with the objective of fostering more effective partnerships for bird monitoring between citizen scientists, state and government agencies, and individual researchers.



## Friday Kellogg Center Auditorium or Brody 112

### **S7: Elaina M. Tuttle and the curious case of the White-throated Sparrow: a memorial symposia**

*Organizer: Rusty Gonser, Indiana State University*

*KC Auditorium, Morning session*

This symposium will honor Dr. Elaina M. Tuttle (1963-2016) who passed away of metastatic breast cancer. For 28 years, she had studied a population of white-throated sparrows in an attempt to understand how a color polymorphism was maintained in the population. Elaina always used diverse approaches, from behavior to GIS to genomics to test scientific theories with her long-term research project. Former students, post-doctoral fellows and collaborators will present on their work with Elaina outlying how understanding the dynamics of this species can provide insights for understanding mating systems in general.

### **S8: Trait divergence and speciation: tempo, mode, and mechanism**

*Organizers: Jay McEntee, University of Florida, and Ben Winger, University of Michigan*

*Brody 112, Morning session*

Understanding how and why traits diverge during speciation has long been a fundamental issue in evolutionary biology. In this symposium, we bring together research on trait divergence and speciation in avian systems from a variety of mechanistic perspectives and temporal scales. Does social/sexual selection or local adaptation more commonly drive trait divergence during speciation? What is the tempo of trait divergence across the avian tree of life and in different geographic theatres, and how is it influenced by population level processes? Does trait divergence typically precede or follow secondary sympatry? Recent years have brought a flood of new insight to these questions from studies in molecular ecology, phylogeography, and macroevolution, which we will explore and synthesize.

### **S9: Mechanisms underlying avian response to energy development**

*Organizer: Lindsay Sanders, University of Wyoming*

*KC Auditorium, Early and late afternoon sessions*

Patterns of negative avian response to energy development have been widely documented, but without an understanding of why birds respond the way they do to human disturbance, we will have no way of mitigating those effects in the future. This symposium will showcase a number of recent studies investigating the response of avian communities to oil and natural gas extraction, and the mechanisms underlying those responses. We will explore a variety of means by which human activities associated with energy extraction may be altering avian communities, including variation in nest predator assemblages and food resources, stress-induced fitness consequences, and the scale of avian response. Our goal is to highlight potential mechanisms of avian decline associated energy extraction practices, and bring researchers together to discuss the breadth of this problem.

### **S10: From fungi to fledglings: cavity-nesting bird ecology and conservation across North America**

*Organizers: Amy Barry, Oregon State University, and James Rivers, Oregon State University*

*Brody 112, Early and late afternoon sessions*

Primary cavity-nesting birds play a crucial role in maintaining the health and diversity of our forest ecosystems throughout the world. Cavity-nesting birds have been strongly influenced by anthropogenic activities, such as wildfire and timber harvest, and snag creation, and therefore a strong understanding of their ecology and conservation is important because it has downstream effects on a range of taxa (e.g., invertebrates, non-excavating birds, mammals). In this symposium, we bring together some of the world's experts who study cavity-nesting birds to share new information regarding the ecology and conservation of this unique group. Our symposium highlights habitat requirements and current management strategies to inform future research and management of cavity-nesting birds; presentations range from illustrating the nexus between the fungi that promote decay and the cavity-nesting species that serve to disperse them, to new information about post-fledging movements of species of heightened conservation concern.





## Saturday Kellogg Center Auditorium or Brody 112

### **S11: Forty-five years of Brown-headed Cowbird control: what have we learned?**

*Organizers: Mary Whitfield, Southern Sierra Research Station, and Barbara Kus,  
USGS Western Ecological Research Center*

*KC Auditorium, Morning and early afternoon sessions*

Cowbird control to reduce brood parasitism is a key component of management to protect hosts of conservation concern. Dating back to the early 1970s, cowbird control has been implemented to promote recovery of several endangered species, including Kirtland's Warbler, Golden-cheeked Warbler, Least Bell's Vireo, Black-capped Vireo, and Southwestern Willow Flycatcher. Two conferences during the 1990s, and a symposium in 2003, provided opportunities for sharing information on cowbird ecology, impacts of cowbirds on hosts, and response of hosts to cowbird control. In the intervening decade and a half, research and practice have improved our understanding of how to use cowbird control effectively to achieve conservation goals. This symposium is intended to bring together researchers, resource managers, and practitioners to share lessons learned and recent advances in science-based cowbird management to benefit sensitive hosts.

### **S12: Sagebrush birds in a changing environment**

*Organizers: Steven E. Hanser, U.S. Geological Survey, Cameron Aldridge, Colorado State University in cooperation with  
USGS, and Peter S. Coates, U.S. Geological Survey*

*Brody 112, Morning and early afternoon sessions*

The sagebrush ecosystem in the western United States supports a diversity of bird species, including the greater and Gunnison sage-grouse and other sagebrush-dependent passerine species. This ecosystem once covered over 150 million acres and that total has been reduced by 40 percent and over half of the remaining habitat has been altered due to a variety of ecosystem threats and human activities, including invasive species, conifer encroachment, climate change, livestock grazing, and development of a variety of energy resources. Presentations will provide insights on how these changes are affecting the bird community and explore potential conservation measures. The issues facing the sagebrush ecosystem are not unique and lessons learned from the collaborative conservation efforts to conserve and restore this ecosystem can serve as a model for species conservation in other ecosystems.

### **Notes:**

# WEDNESDAY, AUGUST 2 – MORNING SESSIONS

PLENARY SESSION - Wells 115: Welcome & Announcements, Plenary Address: Amanda Rodewald									
8:00	Break								
10:00	Break								
Room	Kellogg Auditorium	Kellogg 1054B	Kellogg 1034B	Kellogg 105	Kellogg 104AB	Body 112	Body 134	Body 136	
Session	S1: The Tweeting Bird: Using science communication via social media to benefit your research and your career, Organizers: Auriel Fournier, Jordan Rutter and Nicole Wood	G1: Migration and Movement I: Monitoring Migration Chair: Amber Roth	G2: Urban Ecology 1 Chair: Kathryn Nichols	G3: Landscape ecology Chair: Claire Curry	G4: Evolution I: Hybridization and Speciation Chair: Valentina Gomez	S2: The Kirtland's Warbler: Full Life-Cycle Findings and Application to Conservation, Organizers: Dave Ewert And Nathan Cooper	G5: Ecotoxicology Chair: Kristin Blanchini	G6: Modeling Chair: Elise Zipkin	
10:30	Dudley S: USING SOCIAL MEDIA TO HELP DRIVE YOUR OWN RESEARCH ARTICLE'S ALTMETRIC ATTENTION SCORE Organizers: Auriel Fournier, Jordan Rutter and Nicole Wood	Roth A, Shieldcastle M., Mueller W, Lenz B, Koch K: MIDWEST MIGRATION NETWORK: COORDINATED REGIONAL RESEARCH FOR MIGRATING LANDBIRDS	Narango D *, Tallamy D, Marra P: NON-NATIVE PLANTS REDUCE REPRODUCTIVE SUCCESS OF AN INSECTIVOROUS BIRD	Curry C, Ross J, Contina A, Bridge E: TESTING PREDICTION ACCURACY OF SPATIALLY EXPLICIT MODELS FOR GRASSLAND BIRDS	Weir J, Barrera-Guzman A, Shawkey M, Aleixo A: HYBRID SPECIATION RESULTS IN NOVEL MALE SECONDARY SEXUAL ORNAMENTATION IN AN AMAZONIAN MANAKIN	Bocetti C: HISTORY OF THE KIRTLAND'S WARBLER: SUCCESSFUL CONSERVATION LEADS TO ANTICIPATED DELISTING	Armstrong B, Mittal K, Basu N, Henry P, Karouna-Renier N, Head J, Born K, Murphy C: MODELING AVIAN VITELLOGENESIS: LINKING SUBLETHAL EFFECTS OF 17β-TRENBOLONE TO ADVERSE REPRODUCTIVE OUTCOMES IN JAPANESE QUAIL	Van Wilgenburg S, Solyomos P, Kardynal K, Frey M: PAIRED SAMPLING STANDARDIZES POINT COUNT DATA FROM HUMANS AND ACOUSTIC RECORDERS	
10:45	Rutter J: USING SOCIAL MEDIA AT SCIENTIFIC CONFERENCES, A CASE STUDY OF NAOC 2016	Diehl R, Gauthreaux Jr: MINING BIOLOGICAL DATA FROM WEATHER RADAR: WHERE GREAT POTENTIAL MEETS GREAT CHALLENGES	Bonderud E *, Marini K, Burg T, Reudink M, Otter K: EFFECTS OF INDIVIDUAL CONDITION AND HABITAT URBANIZATION ON MOUNTAIN CHICKADEE REPRODUCTIVE BEHAVIOUR	Eichholz M: AREA SENSITIVITY OF BIRDS IN MIXED-GRASS PRAIRIES: DOES THE PARADIGM DIFFER BETWEEN FORESTS AND PRAIRIES?	Megna L, Carling M: PREDICTING REPRODUCTIVE ISOLATION ACROSS CARDINALIDAE	Rockwell S, Wunderle JM Jr: WINTER RAINFALL CARRIES OVER TO AFFECT SPRING ARRIVAL DATES, REPRODUCTIVE SUCCESS, AND SURVIVAL IN THE ENDANGERED KIRTLAND'S WARBLER	Hixon K *, Roach M, Thompson F III, Brasso R: EFFECTS OF LEAD EXPOSURE ON SONGBIRDS BREEDING IN THE SOUTHEAST MISSOURI LEAD MINING DISTRICT	Zipkin E, Rossman S, Yackulic C: COMBINING UNMARKED DATA TYPES TO MODEL THE POPULATION DYNAMICS OF BREEDING BIRDS	
11:00	Latimore J: TELLING YOUR STORY: TIPS FOR DEVELOPING YOUR SCICOMM STRATEGY	Dokter A, Farnsworth A, Kelling S: ESTIMATING CONTINENT-WIDE PRODUCTIVITY AND SURVIVAL FROM MIGRATORY FLUXES DETECTED BY WEATHER RADAR	Rhodes E *, Borden J, McCreadie J: DEATH BY STRIKE: CORRELATIONS WITH WINDOW STRIKE MORTALITY AND AGE IN AVIAN POPULATIONS	Chaudhary A, Gutzwiller K: DO CROSS-SCALE INTERACTIONS BETWEEN CLIMATE AND SOCIOECONOMIC FACTORS AFFECT THE PERSISTENCE OF AVIAN SPECIES?	Billerman S, Lovette I: INTROGRESSION ACROSS A TOWHEE HYBRID ZONE FROM THE GREAT PLAINS CHARACTERIZED WITH HISTORICAL DNA	Ettersson M, Garber K, Odenkirchen E, Schumaker N: ASSESSING THE RISKS OF PESTICIDES TO BIRD POPULATIONS IN AGROECOSYSTEMS		Gibson D, Riecke T, Keyes T, Depkin C, Catlin D: A BAYESIAN ROBUST DESIGN JOLLY-SEBER MODEL: ASSESSING THE IMPACTS OF HURRICANE MATTHEW ON AMERICAN OYSTERCATCHERS	
11:15	McBride A: THE ART OF SCIENCE COMMUNICATION	Cabrera-Cruz S, Smolinsky J, Buler J: ARE FLIGHT ALTITUDES OF NOCTURNALLY MIGRATING BIRDS INFLUENCED BY LIGHT POLLUTION?	Barton C, Ridling C, Loss S: BIRD COLLISIONS AT GLASS BUS SHELTERS IN AN URBAN LANDSCAPE: MAGNITUDE AND CORRELATES	Gilbert N *, Ferguson P: THE ECOLOGICAL DISTURBANCE ASSOCIATED WITH EXURBAN DEVELOPMENT DOES NOT CREATE HABITAT FOR MOST SHRUBLAND BIRDS	Walsh J, Kovach A, Shriver G, Olsen B, Lovette I: GENOME-WIDE PATTERNS OF INTROGRESSION IN SALT MARSH AND NELSON'S SPARROWS	Mensing C, Cooper N: THE HISTORY AND FUTURE OF BROWN-HEADED COWBIRD CONTROL AND THE IMPACT ON KIRTLAND'S WARBLER SURVIVAL	Rittenhouse K *, Brasso R: MERCURY (HG) EXPOSURE IN INSECTIVOROUS SONGBIRDS AND INVERTEBRATES IN A WETLAND COMMUNITY IN SOUTHEAST MISSOURI	Sierdema H: THE NEW EUROPEAN BREEDING BIRD ATLAS: FIRST RESULTS OF 50X50 KM OCCURRENCE AND 10X10 KM MODELED DISTRIBUTION MAPS	
11:30	Fournier A: #MORails #MOScience: TWEETING LIVE FROM THE FIELD	Gesicki D, Bingman V: TOPOGRAPHICAL INFLUENCES ON MIGRATORY ORIENTATION ALONG THE SOUTHWEST COAST OF LAKE ERIE	Ridling C *, Loss S: ESTIMATION OF SCAVENGER REMOVAL AND OBSERVER DETECTION BIASES IN SURVEYS FOR WINDOW-KILLED BIRDS	Proppe D, Bingle A, Pontius M, DeRuiter S: LANDSCAPE SCALE IMPACTS OF NOISE ON SONGBIRD ABUNDANCE AND PRODUCTIVITY	Porter C, Benkman C: WHY IS SYMPATRIC SPECIATION RARE IN BIRDS?	Huber P, Kintigh K: WINTERING DISTRIBUTION, MIGRATION ROUTES, AND MIGRATORY CONNECTIVITY IN THE KIRTLAND'S WARBLER	Blanchini K *, Newstead D, Morrissey C: EFFECTS OF OIL CONTAMINANT EXPOSURE ON PRE-MIGRATORY FUELLING IN TWO SHOREBIRD SPECIES	Pruett S, Davis R, Dugger K, Jenkins J, Lesmeister D, Sovern S: USING LIDAR DATA AND A BAYESIAN FRAMEWORK TO MODEL NORTHERN SPOTTED OWL NEST SITE SELECTION	
11:45	Wood N: INTERACTIVE SCICOMM ENGAGEMENT WITH LIVE STREAMING APPS	Stanley C *, Hallager S, Marra P: CUEING IN ON MIGRATION: FOOD MODIFIES SPRING MIGRATORY BEHAVIOR IN A CAPTIVE POPULATION OF WOOD THRUSH	Nichols K *: BUILDING AND LANDSCAPE FEATURES AFFECTING BIRD-BUILDING COLLISIONS IN AN URBAN HABITAT	n/a	Gomez V, Miyaki C, Restrepo S, Jahn A, Cadena C: SPECIATION BY LOSS OF MIGRATION IN THE PARTIALLY MIGRATORY FORK-TAILED FLYCATCHER (TYRANNUS SAVANA)?	Cooper N, Hallworth M, Marra P: WINTERING DISTRIBUTION, MIGRATORY ROUTES, AND MIGRATORY CONNECTIVITY IN THE KIRTLAND'S WARBLER	n/a	Susman A *, et al.: COMPARING APPROACHES TO IDENTIFY WATERBIRD HOTSPOTS	

# WEDNESDAY, AUGUST 2 – EARLY AFTERNOON SESSIONS

Room	Kellogg Auditorium	Kellogg 1054B	Kellogg 1034B	Kellogg 106	Kellogg 1044B	Brody 112	Brody 134	Brody 136
Session	S3: Birds of Different Feathers: Increasing Diversity in Ornithology. Organizers: Nancy Chen, Scott Taylor, Nandadevi Cortes-Rodriguez, Sara Kaiser and Kevin Ormland	G7: Migration and Movement II: Staging Chair: Jessica Howell	G8: Urban Ecology II Chair: Luis Sandoval	G9: Parental Care Chair: David Westneat	G10: Evolution II: Insights from morphology Chair: Sushma Reddy	S2: The Kirtland's Warbler: Full life-cycle findings and application to conservation, Organizers: Dave Ewert and Nathan Cooper		
1:30	Ormland K, et al: AOS DIVERSITY AND INCLUSION: ATTRACTING AND RETAINING A BROADER RANGE OF ORNITHOLOGISTS FOR THE 21ST CENTURY	Althouse M, et al.: HOW DOES RECREATIONAL DISTURBANCE AFFECT ACTIVITY BUDGETS OF STAGING TERNS IN CAPE COD, MASSACHUSETTS?	McCabe J, Bernal J, Yin H, Radeloff V, Pigeon A, Zuckenberg B, Bonte D: THE RECENT COLONIZATION OF URBAN HABITATS BY A FOREST BIRD	Utley O, Moldoff D, Westneat D: HUNGRY HUNGRY HOUSE SPARROWS: COMMUNICATING HUNGER IN PASSER DOMESTICUS	Miller C*, Latimer C, Zuckenberg B: BIOGEOGRAPHY OVER TIME: HOW CLIMATE CHANGE INFLUENCES NORTHERN CARDINAL BILL SIZE	Wunderle JM, Jr, Ewert DN, White JD, Currie D, Rockwell SM, Lebow PK: DISTRIBUTION, ECOLOGY, AND SURVIVAL OF KIRTLAND'S WARBLERS ON THE WINTERING GROUNDS		
1:45	Siegal R: FISH AND WILDLIFE SERVICE DIVERSITY AND INCLUSION INITIATIVES	Davis K, et al.: BEHAVIOR AND DEMOGRAPHY OF HY ROSEATE TERNS AT A MAJOR TOURIST DESTINATION DURING THE PRE-MIGRATORY STAGING PERIOD	Zuckenberg B, McCabe J, Pidgeon A, Radeloff V, Bonte D: ETHOLOGY MEETS CITIZEN SCIENCE: ANTI-PREDATOR BEHAVIOR OF BIRDS TO ACCIPITER HAWKS IN URBAN ENVIRONMENTS	Westneat D, Mutzel A, Bonner S, Wright J, Mathot K: DO PARENT BIRDS ENGAGE IN VARIANCE SENSITIVE FORAGING WHEN FACED WITH ELEVATED BROOD DEMAND?	Davis K, Reichard D: SONG SPARROWS: AS TEMPERATURE DECREASES BODY SIZE INCREASES, ALWAYS?	Ribic C, Donner D, Bocetti C: VIABILITY OF KIRTLAND'S WARBLER UNDER CHANGING MANAGEMENT CONDITIONS		
2:00	Welch C: IMPROVING UNDERGRADUATE DIVERSITY AND TRAINING OF FUTURE ORNITHOLOGISTS	Heller E, Karpanty S, Fraser J, Ritter S: ASSESSING THE EFFECTS OF CLIMATE-DRIVEN SHIFTS IN PREY ON RED KNOTS USING VIRGINIA STOPOVER HABITAT	Chilton G, Chilton L: COMMUNAL NOCTURNAL ROOSTING BEHAVIOUR OF PIED WAGTAILS (MOTACILLA ALBA YARRELLI) MAY SERVE NO FUNCTION	Tarvin K, Murphy T: HE'S A LOVER UNLESS SHE'S A FIGHTER: MALE PARENTAL EFFORT REFLECTS FEMALE STATUS AND ORNAMENTATION	James H, Tokita M, Yano W, Abzhanov A: PATTERNS OF DIVERSIFICATION IN CRANIAL SHAPE IN THE HAWAIIAN HONEYCREEPERS AND DARWIN'S FINCHES	Donner D, Ribic CA, Brown DJ, Wolcott DM, Bocetti C, Greco T, Nelson M: KIRTLAND'S WARBLER SUMMER AND WINTER HABITAT CHANGES IN RESPONSE TO FUTURE CLIMATE CONDITION SCENARIOS		
2:15	Goldberg D: APPROACHES TO DIVERSIFYING THE FACULTY	Lyons J, Baker A, González P, Aubry Y: MIGRATION ECOLOGY AND STOPOVER POPULATION SIZE OF RED KNOTS AT MINGAN ARCHIPELAGO AFTER EXITING THE BREEDING GROUNDS	Wituszynski D, Hayford D, Nelson A, Martin J: CHARACTERIZATION OF AN URBAN AVIAN COMMUNITY USING AUTOMATIC DETECTION OF CALLS IN ACOUSTIC RECORDINGS	Kahn Z, Tremblay-Douglas S, Kovach K: DOES DUETTING BEHAVIOUR PREDICT PARENTAL INVESTMENT? A TEST OF THE SIGNALING COMMITMENT HYPOTHESIS	Falk A, Lamsdell J: ANALYSIS OF MODERN AND FOSSIL AVIAN HINDLIMBS SUGGESTS ADVANCED ORNITHURINE BIRDS IN THE EARLY CRETACEOUS	Ewert D, Ertel A, Kinsigh K: CONSERVATION OF THE KIRTLAND'S WARBLER: FUTURE CONSIDERATIONS		
2:30	Break-out session - Chen, Cortes-Rodriguez, Kaiser and Taylor	Howell J*, Morrissey C, McKellar A: CLEARED FOR TAKE-OFF? SHOREBIRD MIGRATORY DECISIONS AND BEHAVIOR IN FLIGHT AT A STOPOVER SITE	Loss S, Marra P: A GLOBAL REVIEW OF DOMESTIC CAT IMPACTS ON MAINLAND BIRD POPULATIONS	Newhouse D, Barcelo-Serra M, Gosner R, Tuttle E, Balakrishnan C: TRANSCRIPTOMIC IMPACTS OF PARENTAL CARE IN WHITE THROATED SPARROW (ZONOTRICHIA ALBICOLLIS) NESTLINGS	Reddy S, Bonfitto M, Akthar S, Gracias N, Helms T, Novak Z, Patel G, Patel R, Savaliya R, Souza N: CHARACTERIZING PHENOTYPIC DIVERSITY OF THE MALAGASY VANGAS USING MORPHOMETRICS AND UNDERGRADUATE RESEARCHERS	n/a		
2:45		Kelley J, Major H, Wilson J: ESTIMATING MIGRATING POPULATIONS OF SCOTER AND LOON SPECIES THROUGH THE BAY OF FUNDY	Sandoval L, Villarreal M, Barrantes G: SHIFT IN FREQUENCY TO MINIMIZE ACOUSTIC MASKING BY ANTHROPOGENETIC NOISE AFFECTS SONG TRANSMISSION	n/a	n/a	n/a		



Brody 134-138	
3:30	
Plenary Address: Society of Canadian Ornithologists/Société des Ornithologistes du Canada Early Career Researcher Award	
4:00	
Early Professionals Mini-talk Symposium	
Organizers: Sara Kaiser, Chris Tonra, Emma Grieg and Scott Taylor	
Moderator: Chris Tonra	
Introduction: Sara Kaiser, Chris Tonra, Emma Grieg and Scott Taylor	
Kristen Covino	
Allison Johnson	
Michael Hallworth	
Erica Stuber	
Rachel Sturge	
Aurel Fournier	
Christine Madliger	
Natalie Wright	
Sarah Hird	
Nicholas Mason	
Andrea Townsend (closing remarks/reflections)	
Sara Kaiser (Early Professional Social)	

Notes:

# THURSDAY, AUGUST 3 – MORNING SESSIONS

PLENARY SESSION – Wells 115: Welcome & Announcements, Plenary Address: Erin Bayne									
8:00	Break								
10:00	Break								
Room	Kellogg Auditorium	Kellogg 1054B	Kellogg 1034B	Kellogg 106	Kellogg 1044B	Body 112	Body 134	Body 136	
Session	S4: Best tools for studies of small landbird movements in the golden age of bio-logging, Organizer: Emily McKinnon	G11: Behavior I Chair: Dai Shizuka	G12: Conservation I: Species-based Approaches Chair: Estelle Sandhaus	G13: Technology Advances in Monitoring Chair: Jackie Augustine	G14: Evolution III: Genomics Chair: Geoff Hill	S5: Agriculture, ecosystem services, and avian conservation, Organizer: Catherine Lindell	G15: Disease and Microbial Ecology Chair: Andrea Townsend	G16: Ecology Chair: Laurie Hall	
10:30	McKinnon E, Love OP: TEN YEARS OF TRACKING LANDBIRDS WITH MINIATURE GEOLOCATORS: WHAT HAVE WE LEARNED AND WHERE DO WE GO FROM HERE?	Enbody E *, Boersma J, et al: DEGREE OF FEMALE ORNAMENTATION IS ASSOCIATED WITH AGGRESSION AND CIRCULATING ANDROGENS IN A TROPICAL PASSERINE BIRD	Matseur E *, Millspaugh J, Thompson F III, Dickerson B: POPULATION ESTIMATE FOR BLACK-BACKED WOODPECKERS IN THE BLACK HILLS OF SOUTH DAKOTA AND WYOMING	Rivers J, Adrean L, Pickett M, Taggart B, Nelson S, Roby D, Betts M: TESTING WHETHER UNMANNED AERIAL VEHICLES CAN BE USED TO LOCATE CRYPTIC NESTS OF THE MARBLED MURRELET	Manthey J, Boissinot S: GENOMIC ANALYSIS OF A TRANSPOSABLE ELEMENT EXPLOSION IN WOODPECKERS AND ALLIES (AVES: PICIFORMES)	Jedlicka J: METHODOLOGIES TO DETECT AVIAN-INDUCED ECOSYSTEM SERVICES	Staley M, Hill G, Josefson C, Armbruster J, Bonneaud C: INSIGHTS INTO THE FACTORS LIMITING DISEASE EMERGENCE IN A NATURAL HOST-PATHOGEN SYSTEM	Wiley A, Ostrom P, James H, Rossman S, Walker W, Zipkin E, Chikaraishi Y: OCEANIC SEABIRD REVEALS BROAD-SCALE TROPIC SHIFT IN THE NORTH PACIFIC	
10:45	Studds C, Marra PP: EXPERIMENTAL FOOD MANIPULATION ALTER THE SPRING MIGRATION SCHEDULE OF A LONG-DISTANCE MIGRATORY BIRD	Geary B *, Walter S, Leberg P, Karubian J: INDIVIDUAL-LEVEL VARIATION IN BROWN PELICAN (PELECANUS OCCIDENTALIS) FORAGING BEHAVIORS IN THE GULF OF MEXICO	Saunders S, Curthbert F, Zipkin E: EVALUATING PIPING PLOVER POPULATION VIABILITY AND CONSERVATION EFFICACY USING INTEGRATED POPULATION MODELS	Strydom K, Scholten C, Proppe D: USING DRONES AND THERMAL SENSORS TO LOCATE NESTS OF GRASSLAND SONGBIRDS	Houde P, Narula N, Braun E, Mirarab S: ANALYSIS OF INSERTION/DELETION MUTATIONS IN 48 GENOMES PROVIDES PERSPECTIVES ON AVIAN DEMOGRAPHICS IN DEEP TIME	Garfinkel M, Whelan C: CAN BIRDS PROVIDE ECOSYSTEM SERVICES IN NORTH AMERICAN INDUSTRIAL AGRICULTURE?	Townsend A, Taff C, Wheeler S, Hinton M, Boyce W, Reisen W, Barker C, Jones M: LOVE IN THE TIME OF EMERGING INFECTIOUS DISEASE: INBREEDING, URBANIZATION, AND WEST NILE VIRUS IN CROWS	Adams E, Gardner B, Kenow K, Luukkonen D, Monfils M, Mueller B, Williams K: NONBREEDING ABUNDANCE OF GREAT LAKES WATERBIRDS: INTEGRATING AERIAL SURVEY DATA ACROSS MULTIPLE PROTOCOLS	
11:00	Crewe T, Deacon J, Morbey Y, Taylor P: QUANTIFYING MIGRATORY BEHAVIOUR USING THE MOTUS AUTOMATED RADIO-TELEMETRY ARRAY: OPPORTUNITIES AND CHALLENGES	Ribic C, Ng C, Koper N, Ellison K, Pletz P: DIET FLEDGING PATTERNS IN GRASSLAND BIRDS	McNeill D, Rodewald A, Johnson K, Larkin J: MONITORING REVEALS SUCCESSFUL MANAGEMENT OF PRIVATE- AND PUBLIC FORESTLANDS FOR NESTING GOLDEN-WINGED WARBLERS	Bird D, Brisson-Curadeau E, Elliott K, Tremblay J, Desrochers A, Pace P, Aubry Y: RECENT ADVANCES IN THE USE OF DRONES TO COUNT SEABIRDS AND TRACK SONGBIRDS	Braun E, Kimball R: CAN WE EFFECTIVELY ESTIMATE ANCESTRAL EFFECTIVE POPULATION SIZES? A CASE STUDY IN GALLIFORMES	Gonthier D, Scilligo A, Karp D, Lu A, Garcia K, Juarez G, Chiba T, Kremen C: MANAGING THE SERVICES AND DISSERVICES OF BIRDS IN CALIFORNIA FARMLANDS	Dolinski A, Owen J: VARIATION IN SA- $\alpha$ 2.3-GAL IS LINKED TO VARIATION OF AVIAN INFLUENZA VIRAL SHEDDING IN MALLARD DUCKS	Hall L, De La Cruz S, Smith L, Krause J: EFFECTS OF WATER QUALITY AND DEPTH ON MACROINVERTEBRATE BIOMASS AND SHOREBIRD ABUNDANCE IN A MANAGED WETLAND	
11:15	Perlut N: NON-STOP TRANSOCEANIC FLIGHTS BY BOBOLINKS DURING MIGRATION	Pandit M, Richardson D, Perryman D, Grindstaff J: EXAMINING THE EXISTENCE AND MAINTENANCE OF BEHAVIORAL SYNDROMES IN EASTERN BLUEBIRDS (SIALIA SIALIS)	Bennett R *, Rodewald A, Rosenberg K: FEMALE-DOMINATED NONBREEDING SITES ARE LOW QUALITY FOR MALE BUT NOT FEMALE GOLDEN-WINGED WARBLERS	Bailey J *, Otter K, Reudink M, Paetkau M, LaZerte S: USING RADIO FREQUENCY IDENTIFICATION (RFID) TECHNOLOGY TO INVESTIGATE GAP CROSSING DECISIONS IN BLACK-CAPPED CHICKADEES	Campagna L, Repenning M, Silveira L: REPEATED DIVERGENT SELECTION ON PIGMENTATION GENES IN A RAPID FINCH RADIATION	Shave M, Schriff S, Elser J, Lindell C: NEST BOXES BENEFIT A DECLINING RAPTOR AND ECOSYSTEM SERVICES IN A FRUIT-GROWING REGION	Hird S, Boyce W: AVIAN INFLUENZA AND THE CLOACAL MICROBIOME OF WILD AVIAN HOSTS	Wells E *, Ballard B, Oldenburger S, Collins D, Brandt D, Pearce A, Perotto-Baldovino H: SELECTION OF ROOSTING HABITAT BY WINTERING SANDHILL CRANES ALONG THE TEXAS GULF COAST	
11:30	Gomez C *, Bayly NJ, Norris R, Mackenzie SA, Rosenberg KV, Taylor PD, Hobson KA, Cadena CD: FUEL LOADS ACQUIRED AT A STOPOVER SITE INFLUENCE THE PACE OF INTERCONTINENTAL MIGRATION IN A BOREAL SONGBIRD	Arellano C *, Mata-Betancourt A, Berg K: INFLUENCE OF EARLY SOCIAL COMPLEXITY ON SIBLING NETWORKS AND LATER COGNITIVE DEVELOPMENT IN A WILD PARROT POPULATION	Herkert J: A LONG-TERM STUDY OF POPULATION PERSISTENCE IN HENSLOW'S SPARROWS	Augustine J: USING ROBOTS TO CONDUCT BEHAVIORAL RESEARCH: A CASE STUDY OF SPECIES RECOGNITION IN PRAIRIE-CHICKENS	Callaway J, Bai Y, Stuart G, Tuttle E, Gonser R: UNDERSTANDING THE EVOLUTION OF A POLYMORPHIC SUPERGENE BY GENOMIC COMPARISON TO A RELATED SPECIES	Sekerloglu C, Mendenhall C, Oviedo Brenes F, Hornes JJ, Ehrlich PR, Daily GC: CONSERVING FOREST BIRD POPULATIONS AND THEIR SERVICES IN TROPICAL AGRICULTURAL COUNTRYSIDE	Fair J, Jankowski M, Glaberman S: SIALIC ACID IN AVIAN BLOOD: IMPLICATIONS FOR DISEASE HOST RANGE	Grinde A, Niemi G: SPATIO-TEMPORAL DYNAMICS OF WOOD WARBLERS	
11:45	Fraser KM, Lam L: PHENOTYPIC PLASTICITY IN SPRING MIGRATION BEHAVIOUR THROUGH REVERSE MIGRATION IN A TRANS-HEMISPHERIC MIGRATORY SONGBIRD	Shizuka D, Chaine A, Lyon B: BADGES OF STATUS IN THE CONTEXT OF SOCIAL NETWORKS	Sandhaus E, Brandt J: 10 YEARS OF CALIFORNIA CONDOR NEST MANAGEMENT IN SOUTHERN CALIFORNIA	n/a	Hill G: THE MITONUCLEAR COMPATIBILITY SPECIES CONCEPT	Lindell C, Eaton R, Roels S, Shave M: ENHANCING AGRICULTURAL LANDSCAPES TO INCREASE CROP PEST REDUCTION BY BIRDS	n/a	n/a	

# THURSDAY, AUGUST 3 – EARLY AFTERNOON SESSIONS

Room	Kellogg Auditorium	Kellogg 105AB	Kellogg 103AB	Kellogg 106	Kellogg 104AB	Brody 112	Brody 134	Brody 135
Session	S4: Best tools for studies of small landbird movements in the golden age of bio-logging, Organizer: Emily McKinnon	G17: Behavior II Chair: Gavin Leighton	G18: Conservation II: Community-based approaches Chair: Paulson Des Brisay	G19: Phylogeography and Systematics I Chair: Jane Younger	G20: Climate Change I Chair: Brooke Bateman	S6: Advances in estimating patterns of bird abundance and distributions at relevant spatial and temporal scales, Organizers: Viviana Ruiz-Gutierrez, John Sauer and Steve Kelling	G21: Avian Parasites Chair: Therese Catanach	G22: Life histories Chair: Michael Murphy
1:30	Hayes S, Boyd B, Stutchbury B.M: FOREST FRAGMENTATION EFFECTS ON SURVIVORSHIP, DISPERSAL AND AUTUMN MIGRATION ON-SET IN JUVENILE WOOD THRUSH	Kelly J *, Ward M: CONSPECIFIC AND HETEROSPECIFIC RESPONSES TO PERCEIVED DENSITY FOR BREEDING HABITAT SELECTION	Wohner P, Stanek J: SONGBIRD INDICATORS FOR RIPARIAN RESTORATION SUCCESS ON THE SOUTH FORK KERN RIVER	Arnaiz-Villena A, Muñiz E, Palado-Gruber J, Campos C, Tejedor B, Martin-Villa M, Ruiz-del-Valle V: STRIKING CONVERGENT PHENOTYPE EVOLUTION IN AN AFRICAN CANARY (ORIOLE FINCH) AND A CARIBBEAN SISKIN (ANTILLEAN SISKIN)	Bateman B, Michel N, Dale K, Slavin Z, LeBaron G, Rowden J, Wilsey C, Taylor L, Langham G: UNCOVERING THE EFFECTS OF CLIMATE CHANGE ON U.S. BIRD SPECIES WITH AUDUBON'S CLIMATE WATCH PROGRAM	Ruiz-Gutierrez V, Sauer J: MONITORING ABUNDANCE AND DISTRIBUTION ACROSS SPACE AND TIME: ADVANCES IN APPROACHES AND METHODOLOGIES FOR MONITORING BIRD POPULATIONS	Catanach T, Johnson K, Marks B, Moyle R, Weckstein J: KINGFISHER FEATHER LICE EXHIBIT DIFFERING DEGREES OF COSPECIATION WITH THEIR HOSTS	Salzman T, McLaughlin A, Westneat D, Crowley P: MODELING LINKS BETWEEN AVIAN BEHAVIOR AND METABOLISM HIGHLIGHTS INTRICACIES OF PACE-OF-LIFE SYNDROME
1:45	Raybuck D, et al: GEOLOCATORS ON 9-10 G BIRDS: ARE THERE BREEDING OR ANNUAL FITNESS EFFECTS ON CERULEAN AND GOLDEN-WINGED WARBLERS?	Brown L, McCarty J, Wolfenbarger L: SITE OCCUPANCY AND BEHAVIOR OF MIGRATORY SHOREBIRDS IN AGRICULTURE FIELDS IN THE RAINWATER BASIN, NE	Reitsma L, Burns CA, Martin M: DECLINE OF A DISTURBANCE-DEPENDENT SPECIES ON PRESERVED LAND	McCullough J *, Mauck W III, Moyle R, Smith B, Andersen M: SYSTEMATICS AND BIOGEOGRAPHY OF THE PAN-TROPICAL AVIAN ORDER CORACIIFORMES	Tremblay J, Boulanger Y, Cyr D, Taylor A, Price D: SCENARIOS FOR BICKNELL'S THRUSH (CATHARUS BICKNELLI) RECOVERY IN A CLIMATE-CHANGE CONTEXT		Sweet A, Johnson K: UNTANGLING THE EVOLUTIONARY HISTORY BETWEEN NEW WORLD GROUND-DOVES AND THEIR PARASITIC LICE	Murphy M: THE GEOGRAPHICAL ECOLOGY OF CLUTCH SIZE IN THE EASTERN KINGBIRD
2:00	Stanley C, Ryder TB, Shriver GW, Marra PM: USING ARCHIVAL GPS TAGS TO DETERMINE THE ECOLOGICAL DRIVERS OF MOVEMENTS ACROSS THE ANNUAL CYCLE	Myers B, Burns K, Clark C: PHENOTYPIC DATA REVEAL AN ALLEN'S (SELASPHORUS SASIN) X RUFOUS (SELASPHORUS RUFUS) HUMMINGBIRD HYBRID ZONE	Des Brisay P *, Leonard M, Koper N: CORTICOSTERONE IS NOT A CONSISTENT PREDICTOR OF RESPONSE TO DISTURBANCE IN THREE GRASSLAND SONGBIRDS	Tsai W, Bonaccorso E, Schwab E, Scott B, Zellmer A, Maley J, Cohn-Haft M, Navarro-Sigüenza A, Peterson A, McCormack J: PHYLOGENETIC RELATIONSHIPS OF NEW WORLD JAYS USING ULTRACONSERVED ELEMENTS	Napoli M, Long E, Huth P: DETERMINING LOCAL EFFECTS OF CLIMATE CHANGE ON MIGRATING SONGBIRDS THROUGH THE USE OF A LONG-TERM PHENOLOGICAL DATASET	Kelling S, Fink C: THE NEED FOR EXPLORATORY AND CONFIRMATORY ANALYSES OF BIRD POPULATIONS	Matthews A *, Klimov P, Proctor H, Dowling A, Diener L, Hager S, Larkin J, Raybuck D, Fiss C, McNeil D, Boves T: ASSESSING COEVOLUTION BETWEEN FEATHER MITES AND WARBLER HOSTS	Garcia V, et al.: THE ROLE OF HELPERS AND TERRITORY QUALITY IN MITIGATING REPRODUCTIVE SENESECE IN THREE SPECIES OF COOPERATIVELY BREEDING BIRDS
2:15	Walls J: TRACKING AS A TOOL FOR CONSERVATION OF BOREAL LANDBIRDS - UNRAVELING MYSTERIES TO ENSURE THE FUTURE OF A BILLION BIRDS	Cummins G *, Paxton E, Theimer T: EVOLUTION OF RESPONSE TO NEST PREDATORS IN PASSERINES	Ehnes M *, Foote J, Dech J, Meating J: SEASONAL CHANGES IN SONGBIRD DETECTION IN URBAN FORESTS: IMPLICATIONS FOR STUDIES OF EMERALD ASH BORER INVASION DYNAMICS	Salter J, Hosner P, Braun E, Kimball R, Faircloth B: SLOW MARKERS AND FAST BIRDS: A SUBSPECIFIC PHYLOGENY OF THE NEW WORLD QUAIL USING THOUSANDS OF UCE LOCI	Smith L *, Walls C, Major H: SEA SURFACE TEMPERATURE AS A FACTOR IN THE REPRODUCTIVE FAILURE OF CRESTED AUKLETS ON GARELOI ISLAND IN 2015		Pulgarin P *, et al.: HOST SPECIES, AND NOT ENVIRONMENT, PREDICTS VARIATION IN PARASITE PREVALENCE, DISTRIBUTION, AND DIVERSITY ALONG A HUMIDITY GRADIENT IN NORTHERN SOUTH AMERICA	Krauss N *, Webster M, Sillett S, Schwabl H: PREDATOR INDUCED MATERNAL EFFECTS
2:30	Roberto-Charron A *, Fraser K: COMPARING GEOLOCATOR-DERIVED ESTIMATES OF LOCATIONS FOR A SWALLOW, A WARBLER, A SPARROW, AND A THRUSH: WHICH R PACKAGE TO USE?	Williams S, Undell C: A CONTEXT-SPECIFIC VOCALIZATION SERVES AS A MECHANISM OF INTERSPECIFIC COHESION IN AMAZONIAN MIXED-SPECIES FLOCKS	Ruhl P *, Dunning Jr, Kellner K, Riegel J, Swihart R: MULTI-SCALE BIRD COMMUNITY RESPONSE TO FOREST MANAGEMENT IN THE CENTRAL HARDWOOD REGION	Kurtis S, Kimball R, Bates J: MOLECULAR DATA SUGGESTS ADMIXTURE BETWEEN SPECIES OF THE AFRICAN MAINLAND PARADISE FLYCATCHERS	Lindsay A, Kaplan J: SIGNATURES OF CLIMATE CHANGE IN 30 YEARS OF LOON MIGRATION AT WHITEFISH POINT BIRD OBSERVATORY	Sauer J, Link WA, Zimmerman GS, Otto MC: NORTH AMERICAN BREEDING BIRD SURVEY: MODEL INFERENCES FROM A COMPLEX SURVEY.	n/a	Crouch C, Brennan L, Benson R, Grahmann E, Hernández F, Kelly J: SURVIVAL, SITE FIDELITY, AND TERRITORY SIZE OF AMERICAN KESTRELS WINTERING IN SOUTH TEXAS
2:45	n/a	Leighton G, Lees A, Miller E: THE HAIRY-DOWNY GAME REVISITED: AN EMPIRICAL TEST OF THE INTERSPECIFIC SOCIAL DOMINANCE MIMICRY HYPOTHESIS	Trevin K *, Rowe K, Mulder R: USING AUTOMATED BIOACOUSTIC TECHNIQUES TO IMPROVE THE MONITORING OF AUSTRALIAN PARROTS	Younger J, Strozler L, Kyriazis C, Maddox D, Goodman S, Raherilabao M, Reddy S: HIDDEN DIVERSITY IN THE VANGAS OF MADAGASCAR	Wu J, Wilsey C, Schuurman G, Taylor L: PROJECTED EFFECTS OF CLIMATE CHANGE ON AVIAN COMMUNITIES IN US NATIONAL PARKS		n/a	Woodworth B, Norris R, Mennill D: YEAR-ROUND CLIMATE AND LOCAL WEATHER EFFECTS ON ANNUAL SURVIVAL OF A RESIDENT NEOTROPICAL SONGBIRD



# THURSDAY, AUGUST 3 – LATE AFTERNOON SESSIONS

Room	Kellogg Auditorium	Kellogg 105AB	Kellogg 103AB	Kellogg 104AB	Kellogg 112	Body 134	Body 135
Session	S4: Best tools for studies of small landbird movements in the golden age of bio-logging, Organizer: Emily McKinnon	G23: Lightning Session I: Population and Community Ecology Chair: Katie Stumpf (See below for presentation titles)	G24: Population Dynamics I Chair: Robert Cooper	G25: Phylogeography and Systematics II Chair: Matthew Miller	G26: Climate Change II Chair: Emily Sinnott	G27: Physiology and Biomechanics Chair: Ryan O'Connor	G28: Migration and Movement III: Dispersal and Movement Chair: Elisa Elizondo
3:30	Bowlin M, et al.: RELATIONSHIP BETWEEN WINGBEAT FREQUENCY AND ALTITUDE CHANGE IN MIGRATING SWAINSON'S THRUSHERS (CATHARUS USTULATUS)	3:30 Session Introduction 3:35 Clark J, Luther D, Chessier T. 3:40 Atkinson E, O'Meara P, O'Meara J.	Cooper R, et al.: EXPLAINING POPULATION DECLINES IN COOL-ADAPTED SPECIES IN THE SOUTHERN APPALACHIANS: MORE QUESTIONS THAN ANSWERS	Balakrishnan C, Lansverk A, Clayton D, London S, Griffith S: BEHAVIORAL AND GENETIC CONSEQUENCES OF DOMESTICATION IN THE ZEBRA FINCH	Stouffer P, Jirinec V, Rutt C, Hernández A: DO RAINFALL TRENDS DRIVE LONG-TERM DECLINES IN TERRESTRIAL INSECTIVORES WITHIN UNDISTURBED AMAZONIAN RAINFOREST?	Shipley A, Zuckerberg B, Sheriff M, Pauli J: SNOW BURROWING BEHAVIOR MEDIATES TEMPERATURE-INDUCED STRESS IN A GALLINACEOUS BIRD	Agullon S, Fitzpatrick J, Bowman R, Schoech S, Clark A, Coop G, Chen N: USING PEDIGREES AND GENOMICS TO UNDERSTAND THE CONSEQUENCES OF LIMITED DISPERSAL
3:45	Mitchell G, et al.: CRYPTIC BROAD-SCALE MOVEMENTS TO NOCTURNAL WETLAND ROOST SITES BY BREEDING BANK SWALLOWS: AN AUTOMATED TELEMETRY STUDY	3:45 Stumpf K 3:50 Eggleston R, Pimm S. 3:55 Hill J, Lloyd J.	Wheelwright N, Taylor L, Woodworth B, Sandercock B: DEMOGRAPHIC COLLAPSE OF AN ISLAND TREE SWALLOW (TACHYCINETA BICOLOR) POPULATION	Contina A, Ruegg K, Bay R, Kelly J, Bridge E: GENOMICS OF THE PAINTED BUNTING: ADAPTIVE GENETIC VARIATION ACROSS POPULATIONS	Maclean S *, Beissinger S, Valpine P, Rios Dominguez A: RESURVEYS REVEAL COMPLEX INFLUENCES OF CLIMATE AND LAND-USE CHANGE ON SPECIES AND COMMUNITIES	O'Connor R *, Brigham M, McKechnie A: DIURNAL BODY TEMPERATURE PATTERNS IN FREE-RANGING POPULATIONS OF TWO SOUTHERN AFRICAN ARID-ZONE NIGHTJARS	Swanson D: EMIGRATION TOWARD THE RABBIT CENTER: THE ABUNDANT CENTER HYPOTHESIS IN GRAY CATBIRDS
4:00	McPherson M *, Jahn A: HOW SEASONALITY IN NORTHERN VS SOUTHERN HEMISPHERES AFFECTS DISTRIBUTIONS OF DIFFERENT TYPES OF MIGRANTS	4:00 Jenkins J, Thompson F, King D, Dellinger T, Wood P, Streby H, Hache S. 4:05 Meehan T, Harvey L, Michel N, Wilsey C, Langham G, Weinstein A.	Norris R, Woodworth B, Wheelwright N, Newman A: LOCAL DENSITY REGULATES MIGRATORY SONGBIRD REPRODUCTIVE SUCCESS THROUGH EFFECTS ON DOUBLE-BROODING AND NEST PREDATION	Rasmussen P, Alström P, Sangster G, Dalvi S, Round P, Zhang R, Yao C, Irestedt M, Le Manh H, Lei F, Olsson U: SYMPATRY, GENETICS, AND SONG INDICATE MULTIPLE SPECIES IN THE BROWN PRINIA P. POLYCHROA COMPLEX	Iknavan K *, Beissinger S: Making the transition: COMPARING AVIAN BIOGEOGRAPHIC RESPONSES TO CLIMATE CHANGE ACROSS BIOMES	Ospina E *, Benson T, Merrill L: INCUBATION TEMPERATURE IMPACTS GROWTH, PHYSIOLOGY, AND SURVIVAL IN NESTLINGS OF AN OPEN-CUP NESTING PASSERINE	Dunn E: RED-BREADED NUTHATCH IRRUPTIONS IN EASTERN NORTH AMERICA: INSIGHTS FROM CITIZEN SCIENCE
4:15	Phillips L, McIntyre C, Gow W, Weidensaul S, Stenhouse I, Critical connections: USING GEOLOCATORS TO INVESTIGATE THE MIGRATION ECOLOGY OF ALASKA'S BREEDING BIRDS	Questions and answers	Dugger K, Ainley D, Ballard G, Lyver P, Barton K: BREEDING PROPENSITY & AGE-AT-1ST REPRODUCTION OF ADÉLIE PENGUINS IN A MULTI-COLONY META-POPULATION	Cooper J: PHYLOGEOGRAPHIC INSIGHTS INTO THE SUBSPECIFIC DIVERSITY OF CINNYRIS REICHENOWI	Behl N *, Benkman C: HOW MANY ARE THERE AND WHERE DO YOU FIND CASSIA CROSSBILLS (LOXIA SINUSCIURUS)?	Sirman A *, Kucera A, Vangorder-Braid J, Heidinger B: GROWING UP AND GROWING OLD: IS IGF-1 A MEDIATOR OF GROWTH AND AGING IN BIRDS?	Gow E, et al.: LATITUDINAL VARIATION AND SIMILARITY IN THE RANGE WIDE TIMING OF THE ANNUAL CYCLE OF TREE SWALLOWS FROM 12 BREEDING POPULATIONS
4:30	Discussion	n/a	Ross B, Hooten M, Koons D: EVALUATING THE INFERENCE FROM DYNAMIC OCCUPANCY MODELS RELATIVE TO POPULATION ABUNDANCE	Kyriazis C, Alam B, Wodjila M, Hosner P, Hackett S, Mays H, Heaney L, Reddy S: COLONIZATION AND DIVERSIFICATION OF THE WHITE-BROWED SHORTWING (AVES: MUSCICAPIDAE: BRACHYPTERYX MONTANA) IN THE PHILIPPINES	Sinnott E, O'Connell T: VARIABLE PRECIPITATION LEADS TO DYNAMIC WESTERN RANGE LIMITS OF EASTERN FOREST SONGBIRDS AT THE FOREST-PRAIRIE ECOTONE	Wright N, Witt C, Tobalske B: BIOMECHANICS OF TAKE-OFF IN ISLAND BIRDS	Evans D *, Mitchell G, Falconer M, Tozer D, Cadman M: ADULT AND JUVENILE BANK SWALLOWS (RIPARIA RIPARIA) SHOW DIFFERENTIAL POST-FLEDGING MOVEMENTS AND DEPARTURE FOR AUTUMN MIGRATION
4:45		n/a	n/a	Miller M, Garzon J, et al: COMBINING MORPHOLOGY AND GENOMICS TO DISCOVER SPECIES LIMITS IN PANAMANIAN OCHRE-BELLIED FLYCATCHERS	DuBay S *, Fuldner C: BIRD SPECIMENS TRACK 135 YEARS OF ATMOSPHERIC SOOT AND ENVIRONMENTAL POLICY	n/a	Elizondo E *, Collier B: AMERICAN WOODCOCK (SCOLOPAX MINOR) MOVEMENT ECOLOGY IN LOUISIANA, USA

Kellogg 105AB	
G23: Lightning Session I: Population and Community Ecology	
Chair: Katie Stumpf	
3:30	Session Introduction – Katie Stumpf
3:35	Clark J, Luther D, Chesser T: Community structure and animal behavior are shaped by anthropogenic noise in a grassland bird community
3:40	Atkinson E, O'Meara P, O'Meara J: Proactive siting of a planned wind turbine installation in response to an eagle occurrence spatial model
3:45	Stumpf K: Understanding the impact of predation on nest success using motion-triggered cameras
3:50	Eggleston R, Pimm S: Estimating avian diversity in western Waorani territory using Indigenous habitat designations
3:55	Hill J, Lloyd J: A fine-scale U.S. population estimate of a montane spruce-fir bird species of conservation concern
4:00	Jenkins J, Thompson F, King D, Dellinger T, Wood P, Streby H, Hache S: Postfledging survival of wood thrush and ovenbirds: incorporating climate and landscape features
4:05	Meehan T, Harvey L, Michel N, Wilsey C, Langham G, Weinstein A: A stage-base matrix population model for exploring black oystercatcher population dynamics
4:10	Question and answers

Notes:

# FRIDAY, AUGUST 4 – MORNING SESSIONS

PLENARY SESSION – Wells 115: Welcome & Announcements, Plenary address: American Ornithological Society Early Career Award Winners							
8:00	Break						
10:00	Break						
Room	Kellogg Auditorium	Kellogg 105AB	Kellogg 103AB	Kellogg 105	Kellogg 104AB	Brody 112	Brody 134
Session	S7: Elaine M. Turtle and the Curious Case of the White-throated Sparrow: A Memorial Symposium, Organizer: Rusty Gonser	G29: Migration and Movement IV: Pathways and Stopovers Chair: Kyle Horton	G30: Undergraduate Symposium I Chair: Melissa Bowlin	G31: Conservation II: Conservation Genetics Chair: Samantha Hauser	G32: Mating systems and sexual selection Chair: Misha Blizard	S8: Trait divergence and speciation: Tempo, mode, and mechanism, Organizers: Jay McEntee and Ben Winger	G33: Brood Parasitism Chair: Matthew Louder
10:30	Ketterton E: ELAINA M. TURTLE: THE SPARROW WHISPERER	Horton K *, Van Doren B, La Sorte F, Fink D, Farnsworth A, Kelly J: THE MIGRANT TURNSTILE, QUANTIFYING 21 YEARS OF MIGRATION THROUGH THE GULF OF MEXICO	Eggleston K, Schultz E, Reichard D: BROCCOLI OR CANDY: WHAT SHOULD I FEED MY CAPTIVE BIRD?	Hauser S *, Leberg P: UNDERSTANDING LANDSCAPE VARIABLES THAT INFLUENCE GENE FLOW IN A HIGHLY VAGILE SPECIES, THE BLACK-CAPPED VIREO (VIREO ATRICAPILLA)	Blizard M, Pruett-Jones S: PATTERNITY AND REPRODUCTIVE SUCCESS IN A POLYANDROUS SHOREBIRD (ACTITIS MACULARIUS)	McEntee J, Winger B, Tobias J, Sheard C, Burligh JG: MACROEVOLUTIONARY AND POPULATION GENOMIC PERSPECTIVES ON TRAIT DIVERGENCE DURING SPECIATION IN BIRDS	Abernathy V *, Troscianko J, Langmore N: EGG MIMICRY OF ONE BROOD PARASITE HOST FACILITATES EXPLOITATION OF NEW HOSTS WITH SIMILAR EGG TYPES
10:45		Mackendey N, Neri C: OWLS OF WHITEFISH POINT	Siddique A *, Augustine J: A COMPARISON OF BIRD DIGESTIVE SYSTEMS BY DIET	Gambo M, Sillett T, Funk W, Morrison S, Ghalambor C: USING KNOWLEDGE OF LOCAL ADAPTATION TO CLIMATE TO INFORM REINTRODUCTION IN THE FACE OF CLIMATE CHANGE	Gould G, Augustine J: NOT ANOTHER DRAB GROUSE – MATE COLOR AND THE ROLE OF CHOICE IN THE LESSER PRAIRIE-CHICKEN	Luro A, Hauber M: A FORAGING ECOLOGY HYPOTHESIS FOR THE EVOLUTION OF EGG REJECTION IN BROOD PARASITE HOSTS	Michel N, Burkhalter C, Wilsey C, Trusty B, Langham G: THE BIRD-FRIENDLINESS INDEX: A NOVEL METRIC FOR QUANTIFYING THE SUCCESS OF CONSERVATION PROGRAMS
11:00	Houtman A: THE CURIOUS CASE OF THE WHITE-THROATED SPARROW	Clipp H *, Schreckengost T, Smolinsky J, Moore F, Buler J: CHANGES IN STOPOVER SITE FUNCTION FROM FALL TO SPRING FOR MIGRATING LANDBIRDS ALONG THE GULF OF MEXICO	Hempfling S *, Augustine J: THE EFFECT OF DIET ON AVIAN CECUM SIZE AND INTESTINAL ABSORBENCY RATE	Funk E *, Burns K: EVOLUTIONARY DISTINCTIVENESS AND CONSERVATION PRIORITIES IN A LARGE RADIATION OF NEW WORLD BIRDS (EMBERIZOIDEA)	McCoy D, Shultz A, van der Heide E, Trauger S, Vidoudez C: RED VELVET AND NEON YELLOW: VIVID COLOR FROM PIGMENT AND STRUCTURE IN THE RAMPHOCULUS TANAGERS	Kenyon H *, Martin PR: WHY DO THE COLOR PATTERNS OF BIRD SPECIES DIFFER WHEN THEY LIVE TOGETHER?	Louder M, Hauber M, Brewer M, Spottiswoode C, Sorenson M, Balakrishnan C: GENOMIC MECHANISMS FOR CONVERGENCE IN THE RECURRENT EVOLUTION OF BROOD PARASITISM
11:15		Covino K, Moore F: MIGRATORY STOPOVER BIOLOGY IS NOT RELATED TO CIRCULATING TESTOSTERONE LEVELS	Butler M, Whelan R, Garvin M: INTERACTIONS BETWEEN MOSQUITOES AND BIRDS: ROLE OF VOLATILE COMPONENTS OF PREEN GLAND SECRETIONS	Wold J *, Ritchie P, Chambers G, Robertson C, McKenzie K: DETERMINE THE PROVENANCE OF THE NEW ZEALAND BULLER'S ALBATROSS (THALASSARCHA BULLERI SSP.)	Michael N, Torres R, Welch A, Bonillas-Monge M, López-Márquez L, Martínez-Flores A, Felis J, Adams J, Wiley A: YOU ARE "WHERE" YOU EAT: SPATIAL FORAGING PATTERNS REFLECTED IN A SEABIRD'S ORNAMENT	Mason N *, Burns KJ, Tobias JA, Claramunt A, Seddon N, Derryberry E: SONG EVOLUTION, VOCAL LEARNING, AND SPECIATION IN PASSERINE BIRDS	Merrill L, Chiavacci S, Patz R, Benson T: MATERNAL EFFECTS IN THE COWBIRD: HOST PREFERENCES AND PATTERNS OF EGG RESOURCE ALLOCATION ACROSS THE LANDSCAPE
11:30	Forrette L, Grunst AS, Grunst ML, Korody M, Tuttle EM, Gonser RA: EXTRA-PAIR MATING AND THE STRENGTH OF SEXUAL SELECTION: INSIGHTS FROM A POLYMORPHIC SPECIES	n/a	n/a	Harkness B *, Robertson G, Friesen V: AN ASSESSMENT OF POPULATION GENOMIC STRUCTURE IN BLACK GUILLEMOTS	Reichard D, Kimmitt A, Welkin J, Ketterson E: SONGBIRD COURTSHIP TACTICS: PAIRED AND UNPAIRED MALES DIFFER IN BEHAVIOR, MORPHOLOGY, AND HORMONES	Derryberry E, Lipshultz S, Overcast I, Hickerson M, Brumfield R: CULTURAL, GENETIC, AND BEHAVIORAL DIVERGENCE COINCIDE IN AN AVIAN HYBRID ZONE	Igl L, Buhl D: CHANGES IN ADULT SEX RATIOS OF THE BROWN-HEADED COWBIRD IN GRASSLANDS IN THE NORTHERN GREAT PLAINS.
11:45	Barcelo-Serra M, Gonser RA, Tuttle EM: PERSONALITY TYPES IN THE POLYMORPHIC WHITE-THROATED SPARROW (ZONOTRICHIA ALBICOLLIS)	n/a	n/a	n/a	n/a	Weir J: BIRD SONG, SPECIES DISCRIMINATION AND THE PACE OF SPECIATION IN TROPICAL VERSUS TEMPERATE LATITUDES	Verhelien B, Sandercock B: COULD SELECTING NEST SITES TO AVOID BROOD PARASITISM LEAD TO LOW FLEDGLING SURVIVAL IN DICKCISSELS?
							Smith O, Kennedy C, Owen J, Snyder W: AVIAN COMMUNITY STRUCTURE IN WEST COAST ORGANIC AGROECOSYSTEMS
							van Vliet H *, Stutchbury B, Newman A: THE EFFECTS OF AGRICULTURAL INTENSIFICATION ON SAVANNAH SPARROWS IN SOUTHERN ONTARIO
							Kusack J *, Evans D, Mitchell G, Cadman M, Hobson K: THE EFFECT OF AGRICULTURAL INTENSITY ON THE DIET OF BARN SWALLOW (HIRUNDO RUSTICA) NESTLINGS



# FRIDAY, AUGUST 4 – EARLY AFTERNOON SESSIONS

Room	Kellogg Auditorium	Kellogg 105AB	Kellogg 103AB	Kellogg 106	Kellogg 104AB	Body 112	Body 134	Body 136
Session	S9: Mechanisms Underlying Avian Response to Energy Development; Organizer: Lindsey Sanders	G35: Lightning Session II: Evolution, Systematics and Behavior Chair: Erin Grabarczyk (See below for presentation titles)	G36: Undergraduate Symposium II Chair: Melissa Bowlin	G37: Conservation IV: Global Concerns Chair: Darren Proppe	G38: Annual Cycles Chair: Jeff Kelly	S10: From fungi to fledglings: cavity-nesting bird ecology and conservation across North America; Organizers: Amy Barry and James Rivers	G39: Habitat Selection I Chair: Dave Luukkonen	G40: Restoration Ecology Chair: Steve Roels
1:30	Koper N, Bernath-Plaisted J, Nenniger H, Ng C, Warrington M: EFFECTS OF OIL AND GAS INFRASTRUCTURE ON ABUNDANCE, PRODUCTIVITY AND BEHAVIOR OF GRASSLAND SONGBIRDS	1:30 Session Introduction  1:35 McElaney S, Hobson K.  1:40 Cyr M *, Koper N.	Hills T, Pigage J, Kersdever A: CHARACTERISTICS OF CANADA GOOSE FLIGHT FORMATIONS USING A STEREOSCOPIC IMAGER	Valentine E, Proppe D: IS NEST PREDATION INCREASED ALONG OIL PAD EDGES IN OTHERWISE CLOSED CANOPY NORTHERN FORESTS?	n/a	Jusino MA, Lorenz TJ, Walters EL, Wynia A, Bank MT, Palmer JM, Koenig JD, Hagemeyer N, Stitt J, Fischer RC, Vierling KT, Jiménez J, Walters JR, Lindner DL: HEART ROT HOTEL 2: THE NEXT GENERATION OF TREE CAVITIES AND FUNGI	n/a	Bellamy D, Mathewson H, Breeden J, Tomecek J, Schwerter T, Giocono J: EVALUATION OF LAND RESTORATION PRACTICES ON NORTHERN BOBWHITE SURVIVAL AND LAND USED IN NORTH-CENTRAL TEXAS
1:45		1:45 Grabarczyk E *, Pipkin M, Vonhof M, Gill S.  1:50 Barber C, Corney H.  1:55 Bonfitto M, Reddy S.	Dreelin A *, Shipley J, Winkler D: CHARACTERIZING THE AERIAL BEHAVIOR OF THREE NORTH AMERICAN HIRUNDINES FROM AN INDIVIDUAL PERSPECTIVE USING A NOVEL ALTITUDINAL DATALOGGER	Toms J, Carpenter T: COMMUNITY AND SPECIES-LEVEL RESPONSES TO ENERGY-SECTOR DISTURBANCES WITHIN REGENERATING FORESTS	Dale C *, Nocera J, Sauve D, Kyser K, Friesen V, Ratcliffe L: FITNESS CONSEQUENCES OF ALTERNATIVE MIGRATORY STRATEGIES IN WESTERN BLUEBIRDS	Walters J, Blanc L, Rose K: CAVITY-NESTING BIRD COMMUNITIES OF SOUTHERN PINE ECOSYSTEMS: DYNAMICS AND MANAGEMENT	Brossman E, Yungler J, Mendelson J, Neidy E, Thompson D, Carps S: HABITAT SELECTION OF CAPTIVE-REARED BARN OWLS	Smith R, Brennan L, Perotto-Baldovino H, Hernández F: FACTORS INFLUENCING NORTHERN BOBWHITE DENSITY, NEST SITES, AND NEST SURVIVAL ON POST-GRAZING LANDSCAPES IN SOUTH TEXAS
2:00	Heathcote A *, Koper N: INVESTIGATING THE EFFECTS OF OIL DEVELOPMENT AND NOISE ON CORTICOSTERONE IN AN ALTRICIAL GRASSLAND SONGBIRD NESTLING	2:00 Maley J, Applewhite E, Tsai W, McCormack J.  2:05 Hiller A, Brumfield R, Faircloth B.  2:10 Sullivan P, Rasmussen P, Irestedt M, Ericson P, Lambert F, Rheindt F.	Bennett B *, Polekoff S, Curry R: EXPLORATORY BEHAVIOR AS A COMPONENT OF PERSONALITY IN CAROLINA, BLACK-CAPPED, AND HYBRID CHICKADEES	Hallager S, Steiner J, Palfrey K: GROWING AND OPTIMIZING EX SITU EFFORTS SUPPORTING SONGBIRD CONSERVATION	Imley T *, Mastromonaco G, Angelier F, Hobson K, Leonard M: CARRY-OVER EFFECTS FROM WINTERING TO BREEDING FOR BARN AND CLIFF SWALLOWS	Hagar J, Sherman L: SNAG-NESTING PURPLE MARTINS IN UPLAND FORESTS OF THE PACIFIC NORTHWEST	Scholten C, Strydom K, Proppe D: ARE ACOUSTIC CUES A DRIVER OF HABITAT SELECTION IN GRASSLAND OBLIGATE SONGBIRDS?	Minor A, Eichholz M: INFLUENCE OF VEGETATION COVER ON AVIAN PRODUCTIVITY AND COMMUNITY ECOLOGY IN RESTORED PRAIRIE POT-HOLE GRASSLANDS
2:15	Rosa P *, Koper N: EFFECTS OF PETROLEUM INFRASTRUCTURE ON ABUNDANCE AND PRODUCTIVITY OF GRASSLAND BIRDS: THE ROLE OF ANTHROPOGENIC NOISE	2:15 Kimball R, Hosner P, Braun E.  2:20 Questions and answers	Toner S, Hendrix T, Lantz S, Welkin J, Fernandez-Duque F, Swaddle J: BEHAVIORAL CHANGE AND ORNAMENTAL PLUMAGE IN THE NON-BREEDING SEASON IN A TROPICAL PASSERINE	Stuber E, Fontaine J: THE VALUE OF SCALE IN OPTIMIZING UMBRELLA SPECIES	Kelly J, Horton K, Pletscher S: PHENOLOGY OF THE ANNUAL CYCLE OF AN AVIAN SYNANTHROPE	Hagemeyer N *, Pesendorfer MB, Koenig WD, Walters EL: RESPONSES TO A CHANGING LANDSCAPE IN ACORN WOODPECKERS	Andersen E *, Steidl R: NONNATIVE GRASSES DECOUPLE HABITAT SELECTION FROM FITNESS IN GRASSLAND BIRDS	Marsh D, Deloria-Sheffield C, Stucker J, Cavallieri V, Palmgren G: SHORELINE HABITAT RESTORATION FOR THE ENDANGERED PIPING PLOVER IN NORTHERN MICHIGAN
2:30	Curry C, Des Brisay PG, Rosa P, Koper N: EFFICACY OF ADJUSTED SONGS FOR COMMUNICATION IN NOISE VARIES WITH INFRASTRUCTURE TYPE AND HORMONE LEVELS	n/a	Xu A, Hoese W, Zacherl D: AVIAN USE OF RECENTLY RESTORED EELGRASS MEADOWS AS PART OF A LIVING SHORELINES PROJECT	Abraham E, Crampton L, Hite J, Masuda B, Clark M, Vetter J: SECURING THE FUTURE: HOW TO CONSERVE POPULATIONS OF CRITICALLY ENDANGERED ENDEMIC PASSERINES IN KAUAI	Wright J *, Powell L, Tonra C: SHOREBIRDS IN DISGUISE: PRE-ALTERNATE MOLT-MIGRATION AND EXTENDED STOPOVER OF RUSTY BLACKBIRDS	Groff T, Lorenz TJ, Sehgal RN: BLOOD PARASITES IN COOPERATIVE BREEDING VERSUS MONOGAMOUS BREEDING WOODPECKERS	Luukkonen D, Shirley B, Winterstein S: DIVING DUCK DISTRIBUTION AND ABUNDANCE ON LAKE ST. CLAIR BEFORE AND AFTER INVASION BY DREISSENID MUSSELS	Roels S, Porter J, Lindell C: PREDATION PRESSURE FOR DUMMIES: AVIAN ATTACKS ON CLAY CATERPILLARS ACROSS A TROPICAL LANDSCAPE
2:45	Shonfeld J, Bayne E: IMPACTS OF ENERGY DEVELOPMENT AND DISTURBANCE ON OWLS IN THE BOREAL FOREST AT MULTIPLE SCALES	n/a	Ellis A *, Shannon P: FORAGE FISH ABUNDANCE IN COMMON TERN DIETS, AND ITS IMPLICATIONS FOR SEABIRD POPULATIONS	Eyster H, Chan K: A FRAMEWORK FOR USING EBIRD OBSERVER DATA TO MODEL HUMAN VALUES FOR BIRD CONSERVATION	Rohwer V: MOLT ASYMMETRIES IN LARGE BIRDS	Kahoe A, Saab VA, Latif Q, Dudley JG: SPACE USE AND FORAGING PATTERNS OF THE WHITE-HEADED WOODPECKER IN WESTERN IDAHO	Palumbo M, Pettie S, Schummer M: HABITAT SELECTION OF ADULT FEMALE MALLARDS IN THE LAKE ST. CLAIR REGION DURING AUTUMN AND WINTER	Iriarraz A *, Collazo J, Padfield K, Reich B: AVIAN RESPONSE TO SHADE LAYER RESTORATION IN COFFEE PLANTATIONS IN PUERTO RICO

Kellogg 105AB	
G35: Lightning Session II: Evolution, Systematics and Behavior	
Chair: Erin Grabarczyk	
1:30	Session introduction – Erin Grabarczyk
1:35	McElaney S, Hobson K: Nocturnal roosting in shade coffee plantations: neotropical migrants and the need for safe havens
1:40	Cyr M *, Koper N: Effect of chronic anthropogenic noise on extra-pair paternity rate and mate choice of a threatened prairie obligate
1:45	Grabarczyk E *, Pipkin M, Vonhof M, Gill S: When to change your tune? Unpaired and paired male wrens respond differently to anthropogenic noise
1:50	Barber C, Corney H: Do parents listen to their children? Begging does not go unanswered in European starlings ( <i>Sturnus vulgaris</i> )
1:55	Bonfitto M, Reddy S: Investigating the role of ecology and evolution in bill shape variation among Malagasy vangas using 3D geometric morphometrics
2:00	Maley J, Applewhite E, Tsai W, McCormack J: A fresh look at some old specimens: revisiting a collared and spotted towhee hybrid zone
2:05	Hiller A, Brumfield R, Faircloth B: Knowns and unknowns in the origin of leapfrog variation in Andean birds
2:10	Sullivan P, Rasmussen P, Irestedt M, Ericson P, Lambert F, Rheindt F: Evidence from mtDNA and song for multiple species within the hooded pitta <i>Pitta sordida</i> complex
2:15	Kimball R, Hosner P, Braun E: How super are supermatrices?
2:20	Questions and Answers

Notes:

# FRIDAY, AUGUST 4 – LATE AFTERNOON SESSIONS

Room	Kellogg Auditorium	Kellogg 103AB	Kellogg 106	Kellogg 104AB	Brody 112	Brody 134	Brody 136
Session	S9: Mechanisms Underlying Avian Response to Energy Development, Organizer: Lindsey Sanders	G41: Breeding Behavior I Chair: Mark Hauber	G42: Communication and Song I Chair: Dan Mennill		S10: From fungi to fledglings: cavity-nesting bird ecology and conservation across North America, Organizers: Amy Barry and James Rivers	G43: Population Dynamics II Chair: Michael Hardy	G44: Habitat Selection II Chair: Gregory Keller
3:30	Farwell L, Wood P: BREEDING SONGBIRD RESPONSE TO FOREST FRAGMENTATION DUE TO MARCELLUS-UTICA SHALE GAS DEVELOPMENT	Wynia A *, Rozzi R, Jiménez J: HOW IMPORTANT IS CAVITY PROVISIONING BY MAGELLANIC WOODPECKERS? A CASE STUDY IN THE WORLD'S SOUTHERNMOST FORESTS	Moran I *, Doucet S, Newman E, Norris R, Mennill D: QUIET VIOLENCE: SONGBIRDS RESPOND TO PLAYBACK-SIMULATED RIVALS USING SOFT SONGS AS AGGRESSIVE SIGNALS OF INTENTION		Lorenz T, Fischer PC: VARIATION IN JUVENILE SURVIVAL AND DISPERSAL OF TWO WOODPECKER SPECIES REVEALED BY RADIO TELEMETRY	Dinsmore S, Ruff Z: MOUNTAIN PLOVER (CHARADRIUS MONTANUS) NEST SPACING PATTERNS IN MONTANA	Bednar J, Zlonis E, Hamady M, Niemi G: HABITAT ASSOCIATIONS OF BREEDING BIRDS IN A LOWLAND CONIFER DOMINATED LANDSCAPE, MINNESOTA, USA
3:45	Wood P, Frantz M: RESPONSE OF LOUISIANA WATERTHRUSH AND THEIR BENTHIC PREY TO SHALE GAS DEVELOPMENT	Swift R *, Rodewald A, Senner N: CONTEXT-DEPENDENT PROTECTIVE NESTING ASSOCIATION IN HUDSONIAN GODWITS (LIMOSA HAEMASTICA)	Demko A *, Mennill D: THE VOCAL BEHAVIOR OF A TROPICAL RESIDENT SONGBIRD, THE RUFOUS-CAPPED WARBLER		Stephens J, Verschuyll J, Halstead K, Rock D: DO BLACK-BACKED WOODPECKERS USE GREEN FORESTS?	Cruz Bernal J, Windels S, Thogmartin W, Crimmins S, Grim L, Zuckenberg B: THE RETURN OF BALD EAGLES: SPATIOTEMPORAL DYNAMICS OF A RECOVERING APEX PREDATOR AND BENEFICIAL MANAGEMENT IMPACTS	Stalwick J, Wiebe K: FORAGING PATTERNS, PREY USE, AND REPRODUCTION OF MOUNTAIN BLUEBIRDS IN CLEARCUT VERSUS GRASSLAND HABITATS
4:00	Chalfoun AD, Hethcoat M, Sanders L: NATURAL GAS FIELDS AS ECOLOGICAL TRAPS FOR NESTING BIRDS	Labbe A *, Dunlop J, Calver M, Shephard J, Van Keulen M: AGE EFFECTS ON THE BREEDING PERFORMANCE OF BRIDLED TERNS BREEDING IN SOUTH WESTERN AUSTRALIA	Schroeder K *, McRae S: VOCALIZATIONS IN A NON-PASSERINE: WHAT CAN CALL STRUCTURE TELL US ABOUT AN INDIVIDUAL KING RAIL?		Tingley M, Stillman AN, Wilkerson RL, Siegel RB: MULTI-SCALE SPATIOTEMPORAL DYNAMICS OF BLACK-BACKED WOODPECKERS IN CALIFORNIAN BURNED FORESTS	Shurtliff Q: COMMON RAVEN USE OF POWER LINES FOR NESTING: IMPLICATIONS FOR GREATER SAGE-GROUSE CONSERVATION	Fiss C, Larkin J, McNeil D: HABITAT SELECTION AND MOVEMENT OF FLEDGLING GOLDEN-WINGED WARBLERS IN MANAGED MIXED-OAK FORESTS OF THE CENTRAL APPALACHIAN MOUNTAINS
4:15	Sanders L *, Chalfoun AD: WHAT IS SUSTAINING HIGHER NEST PREDATOR ABUNDANCE WITHIN NATURAL GAS FIELDS?	Behnke T, Street P, Sedinger J: TEMPORAL VARIATION IN NESTING PROPENSITY SUGGESTS TRADEOFFS BETWEEN ADULT SURVIVAL AND CURRENT REPRODUCTIVE EFFORT IN GREATER SAGE-GROUSE	Apol C, Sturdy C, Proppe D: LACK OF SEASONAL VARIATION IN HABITAT MAY HAVE FACILITATED THE LOSS OF A SONG IN THE BOREAL CHICKADEE		Wiebe K: MOVEMENTS, CAVITY EXCAVATION AND REPRODUCTIVE SUCCESS OF FLICKERS IN RESPONSE TO WILDFIRES	Hardy M *, Broadway M, Hull S, Riddle J, Zuckenberg B: POTENTIAL MISALIGNMENT OF MANAGEMENT PRACTICES AND GREATER PRAIRIE-CHICKEN DEMOGRAPHY IN WISCONSIN'S GRASSLANDS	Brunner A *, Tonra C, Marra P: SEASONAL CHANGES IN RAINFALL INFLUENCE HABITAT UTILIZATION AND DIET IN WINTERING SWAINSON'S WARBLERS
4:30	DISCUSSION	Hart M *, Stouffer P, Taylor S, Burns C, Alquist A, Woltmann S: SEASIDE SPARROW (AMMODRAMUS MARITIMUS) NEST SUCCESS FOLLOWING THE DEEPWATER HORIZON OIL SPILL	Landsborough B, Hasson R, Foote J, Mennill D: QUANTITATIVE ANALYSIS OF INTRASPECIFIC VARIATION IN THE NOCTURNAL FLIGHT CALLS OF MIGRATORY PASSERINES		Edworthy A, Trzcinski K, Cockle K, Wiebe K, Martin K: OCCUPANCY OF TREE CAVITIES AS THEY AGE: SELECTION FOR YOUNG, MID-AGED AND OLDER NESTING CAVITIES BY CAVITY-NESTING VERTEBRATES	n/a	Keller G: HABITAT DEGRADATION AND LANDSCAPE HETEROGENEITY ON WINTERING MIGRANTS IN LOWLAND BELIZE RAINFOREST
4:45	n/a	Hauber M, Baratteli K, McCarthy CJ, Cassey P, Dale J: FEMALE-SPECIFIC CONSISTENCY IN THE EGG MORPHOLOGY OF COMMON MURRES	Mennill D, Doucet S, Williams H, Newman A, Norris R: WILD BIRDS LEARN SONGS FROM EXPERIMENTAL VOCAL TUTORS		Barry A, Rivers JR: IF YOU BUILD IT, WHO WILL COME? ASSESSING USE OF CREATED SNAGS BY CAVITY-NESTING BIRDS ACROSS 25 YEARS	n/a	Soto G, Rodewald A, Vergara P, Ojeda V, Chazarretad L: PREVIOUSLY-USED NESTING CAVITIES INFLUENCE OCCURRENCE AND TERRITORY SIZE OF MAGELLANIC WOODPECKERS



# SATURDAY, AUGUST 5 – MORNING SESSIONS

PLENARY SESSION – Wells 115: Welcome & Announcements, Plenary Address: Michael Sorenson									
Break									
Room	Kellogg Auditorium	Kellogg 105AB	Kellogg 103AB	Kellogg 105	Kellogg 104AB	Brody 112	Brody 134	Brody 136	
Session	S11: Forty-five years of Brown-headed Cowbird Control: What have we learned? Organizers: Barbara Kus and Mary Whitfield	G45: Breeding Behavior II Chair: Mike Butler		G46: Communication and Song II Chair: Carla Cicero		S12: Sagebrush Birds in a Changing Environment. Organizers: Steve Hanser, Cameron Aldridge and Peter S. Coates	G47: Evolution V: Habitat influences on diversification Chair: Colleen Barber		
10:30	Whitfield MJ, Kus BE: OVERVIEW OF COWBIRD CONTROL: EFFECTIVENESS, COSTS AND CONCERNS	Butler M, Rossi M: HOUSE SPARROWS EXHIBIT LESS NEST DEFENSE THAN BOTH EASTERN BLUEBIRDS AND TREE SWALLOWS		Graham B, Heath D, Mennill D: LEARNING ON THE FLY: DISPERSAL INFLUENCES ACOUSTIC VARIATION FOR BOTH MALES AND FEMALES IN A TROPICAL SONGBIRD		Hanser SE, Aldridge CA, Coates PS: SAGEBRUSH BIRDS AND THE COLLABORATIVE CONSERVATION EFFORT TO RECOVER AN IMPERILED ECOSYSTEM	van Els P, Etienne R: THE ROLE OF HABITAT IN AVIAN DIVERSIFICATION		
10:45	Cooper N, Marra P: EVALUATING THE COWBIRD CONTROL PROGRAM TO REDUCE CONSERVATION-RELIANCE OF THE KIRTLAND'S WARBLER	Upham-Mills E, Bayne E, Haché S: USE OF SONG RATE TO INFER BREEDING STATUS IN THE OLIVE-SIDED FLYCATCHER		Sanchez N, Bayne E: BEAK MORPHOLOGY PREDICTS VOCAL FEATURES IN SONGBIRDS: UNDERSTANDING VOCAL RESPONSES TO CHRONIC INDUSTRIAL NOISE		Ricca MA, et al.: WILDFIRE, CLIMATE, AND INVASIVE GRASS INTERACTIONS NEGATIVELY IMPACT AN INDICATOR SPECIES BY RESHAPING SAGEBRUSH ECOSYSTEMS	Luzuriaga-Aveiga V, Weir J: THE ROLE OF ECOLOGICAL DIFFERENTIATION IN ACCELERATING REPRODUCTIVE ISOLATION IN ANDEAN AND AMAZONIAN BIRDS		
11:00	Kus B, Lynn S: WHEN LESS IS MORE: ALTERNATIVE PROTOCOLS FOR REDUCING PARASITISM OF THE LEAST BELL'S VIREO	Collins S, Selman W, Strong W: REPRODUCTIVE ECOLOGY OF REDDISH EGRETS NESTING ON A NATURAL MARSH ISLAND IN SOUTHWEST LOUISIANA		Strauss A, Podos J: IS ACOUSTIC ADAPTATION A DRIVER OF SONG DIVERGENCE IN GALAPAGOS FINCHES?		Severson J, Coates P, Ricca M, Prochazka B, Hagen C: SUMMARY OF RECENT STUDIES ON THE EFFECTS OF CONIFER EXPANSION AND REMOVAL ON SAGE-GROUSE	Demery A, Burns K, Mason N: CORRELATED TRAIT EVOLUTION AMONG ABIOTIC AND BIOTIC FACTORS IN A CONTINENTAL RADIATION (THRAUPIDAE)		
11:15	Summers S, Gimpich D: REDUCING COWBIRD CONTROL COSTS AT FORT HOOD, TEXAS: IMPLICATIONS FOR BLACK-CAPPED VIREO RECOVERY	van Riper C III, Darrach A, Greeney H: NEST SITE ENHANCEMENT CAN INFLUENCE POLYGAMY IN THE CORDILLERAN FLYCATCHER ALONG THE DOLORES RIVER IN SOUTHWEST COLORADO		Otter K, McKenna A, Lazerte S, Ramsay S: THE POSSIBLE LINK BETWEEN WINTERING GROUNDS AND CONTINENTAL WIDE SHIFTS IN SONG DIALECTS OF WHITE-THROATED SPARROWS		Monroe A, Aldridge C, Assal TJ, Veblen KE, Pyke DA, Casazza ML: RESPONSES TO LAND USE BY GREATER SAGE-GROUSE AT BROAD SCALES: AN EXAMPLE FROM PUBLIC GRAZING RECORDS	Conway M, Kovach A, Olsen B: STRUCTURE OF ECOLOGICAL SPECIALIZATION: IMPLICATIONS FOR CONSERVATION IN A RAPIDLY CHANGING ENVIRONMENT		
11:30	McLeod MA, Koronkiewicz TJ: COMPARATIVE CAPTURE EFFICIENCY OF PORTABLE COWBIRD TRAPS	Cloud B, Hartman P, Confer J, Westmeat D: HETEROSEXUAL EXTRA-PAIR FERTILIZATIONS AS A MECHANISM FOR HYBRIDIZATION BETWEEN TWO SPECIES OF WOOD WARBLERS		Najar N, Benedict L: GEOGRAPHIC VARIATION IN SONG COMPLEXITY IN THE ROCK WREN (SALPINCTES OBSOLETUS)		Conway C, Mustil D, Makela P, Roberts S, Launchbaugh K, Meyers A: EFFECTS OF CATTLE GRAZING ON GREATER SAGE-GROUSE AND OTHER SAGEBRUSH STEPPE BIRDS	n/a		
11:45	n/a	Walton N, Niemi G, Zlonis E: RESULTS OF THE MINNESOTA BREEDING BIRD ATLAS: SPECIES DISTRIBUTION MODELS AND POPULATION ESTIMATES		Cicero C, Jenkins C: SONG AS A DRIVER OF REPRODUCTIVE ISOLATION IN WESTERN SPOTTED TOWHEES (PILO MACULATUS)		Chalfoun A, Carlisle J, Keenath D, Smith K, Beck J, Murphy M, Albeke S: THE GREATER SAGE-GROUSE AS A CONSERVATION SURROGATE: WHERE ARE THE HOLES IN THE UMBRELLA?	n/a		

# SATURDAY, AUGUST 5 – EARLY AFTERNOON SESSIONS

Room	Kellogg Auditorium	Kellogg 105AB	Kellogg 103AB	Kellogg 106	Kellogg 104AB	Brody 112	Brody 134	Brody 136
Session	S11: Forty-five years of Brown-headed Cowbird Control: What have we learned? Organizers: Barbara Kus and Mary Whitfield	G48: Community Ecology Chair: Supriya K	Kellogg 103AB	G49: Population Dynamics III Chair: Peter Arcese	Kellogg 104AB	S12: Sagebrush Birds in a Changing Environment; Organizers: Steve Hanser, Cameron Aldridge and Peter S. Coates	G50: Migration and Movement V: Connectivity Chair: T.J. Zenzal	G51: Management Chair: Tim Parker
1:30	Kostecke R, Wilsey C, Cimprich DA, Summers SG: WILL IT EVER END? COWBIRD MANAGEMENT AND A CONSERVATION RELIANT SPECIES	Supriya K, Moreau C, Price T: COMPETITION BETWEEN BIRDS AND ANTS FOR NESTING CAVITIES AT LOW ELEVATION IN EASTERN HIMALAYAS		Arcese P, Tarwater C: INDIVIDUAL VARIATION IN REPRODUCTION AND THE FAST-SLOW LIFE HISTORY CONTINUUM IN A SHORT-LIVED BIRD		Timmer J, Aldridge C, Breugger R, Tipton C, Fernandez-Gimenez M: EXTENDING STATE-AND-TRANSITION MODELS TO INCLUDE WILDLIFE ECOSYSTEM SERVICES	Zenzal T, Contina A, Kelly J, Moore F: CONNECTIVITY BETWEEN GULF COAST STOPOVER AND BREEDING LOCATIONS OF RUBY-THROATED HUMMINGBIRDS	Parker T: ASSESSING THE RELIABILITY OF THE EMPIRICAL LITERATURE IN ECOLOGY AND EVOLUTIONARY BIOLOGY
1:45	Whitfield MJ, Hall LS, Parker SS: AN ADAPTIVE APPROACH TO COWBIRD MANAGEMENT ON A SOUTHERN CALIFORNIA DRAINAGE	Kent C, Sherry T: YEAR ROUND COMPETITION IN A MIGRATORY SONGBIRD: DIETARY OPPORTUNISM, OVERLAP, AND PRIVATE RESOURCES		Hallworth M, Sillett T, Kaiser S, Ryder T, Webster M: THE COST OF REPRODUCTION IN A GREENING WORLD		Falkowski M, Reinhardt JR, Naugle DE, Doherty KE, Alfred B, Tack JD: DECISION SUPPORT TOOL FOR PINYON-JUNIPER REMOVAL: MAXIMIZING BENEFITS TO SAGEBRUSH AND FOREST OBLIGATE SONGBIRDS	McKellar A, et al.: FULL ANNUAL CYCLE TRACKING REVEALS THE MIGRATORY ROUTES AND NON-BREEDING DISTRIBUTION OF A DECLINING WATERBIRD	Fournier A, Woodrey M, Lyons J, Cooper B, Evans K: APPLICATION OF STRUCTURED DECISION MAKING TO MARSHBIRD MONITORING IN THE GULF OF MEXICO
2:00	DISCUSSION	Demhardt A, Roloff G, Pearsall D, Doran P, Hall C: EFFECTS OF NORTHERN HARDWOODS SILVICULTURE ON FOREST BIRD COMMUNITY DYNAMICS		Dossman B, Rodewald A, Marra P: SEASONAL RAINFALL INFLUENCES INTRA- AND INTER-SEASONAL VARIATION IN TERRITORIALITY OF A WINTERING MIGRATORY SONGBIRD		Pavlacky D: INTEGRATING STAKEHOLDER OBJECTIVES, ECOLOGICAL SITE DESCRIPTIONS AND MONITORING DATA TO ACHIEVE MULTI-SPECIES BIRD CONSERVATION IN SAGEBRUSH RANGELANDS	Mancuso K, Bishop C, Hodges K, Huang A, Lancaster M, Bezener M: TWO RIPARIAN SONGBIRD SPECIES AT THE PERIPHERY OF THEIR BREEDING RANGE	Washburn B, Linnell K: ASSESSING OWL COLLISIONS WITH U.S. CIVIL AND U.S. AIR FORCE AIRCRAFT
2:15		Barve S, Warrier R, Dhondt A: THE UNDERDOGS ARE WINNING: DRIVERS OF ELEVATIONAL DISTRIBUTION IN HIMALAYAN TITMICE		Greig E, Larsen E: EXTREME ENVIRONMENTAL CONDITIONS AND REPRODUCTIVE BEHAVIOR IN A DESERT SONGBIRD (VERDINS: REMIZIDAE)		Aldridge C, Saher J, Hanser SE, Heinrichs J, Monroe A, Leu M: EVALUATING BIODIVERSITY OF SAGEBRUSH-DEPENDENT SPECIES WITHIN SAGE-GROUSE HABITAT: AN EXAMPLE FROM THE WYOMING BASINS	Kramer G, et al.: RANGE-WIDE MIGRATION PATTERNS AND DISTRIBUTION OF VERMIVORA WARBLERS DURING THE NONBREEDING PERIOD	Tozer D, Steele O, Gloutney M: MULTISPECIES BENEFITS OF WETLAND CONSERVATION FOR MARSH BIRDS, FROGS, AND SPECIES AT RISK
2:30	n/a	Wu Y: YAK DUNG AND GRASS STRUCTURE INFLUENCE THE FORAGING ECOLOGY OF BLACK-NECKED CRANES BREEDING ON THE QINGHAI-TIBET PLATEAU		n/a		Coates P, Prochazka BG, Ricca MA, Aldridge CA, O'Donnell MS, Hanser SE, Doherty KE: HIERARCHICAL POPULATION MONITORING TO INFORM ADAPTIVE MANAGEMENT: AN EXAMPLE FROM THE SAGEBRUSH ECOSYSTEM	Toews D, Heavyside J, Irwin D: THE EVOLUTION AND CONSTRAINTS OF MIGRATION IN WOOD WARBLERS	n/a
2:45	n/a	Morra K, Chikaraishi Y, James H, Ostrom P, Zipkin E, Rossman S, Wiley A: PELAGIC SEABIRD SPECIES PARTITION THE NORTH PACIFIC OCEAN		n/a		DISCUSSION	n/a	n/a

# Notes



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Poster sessions will be held Wednesday, August 2 and Thursday, August 3, from 7:00 - 9:00 pm in the Big Ten A room of the Kellogg Center.

Presenting author is the first author listed unless indicated by a diamond ♦.

Students competing for a presentation award are indicated by an asterisk \*.

## Wednesday at 7:00 pm Big Ten A

### Social Networks

P1. R Garlinger \*, C Eldredge, C Roche, R Curry  
Social integration of irruptive Black-capped Chickadees into Carolina Chickadee territory

P2. I Swart, A Lindsay, J VanOrman  
JP chickadee project: big data from a little bird

### Behavior

P3. M Stanback, E Niemasik  
Do Barn Swallows settle in an Ideal Free Distribution?

P4. T Block  
Are personality traits repeatable in golden-crowned sparrows (*Zonotrichia atricapilla*)?

P5. JA Jones, J Boersma, E Enbody, J Karubian  
Ecological correlates of behavioural and social change in dichromatic Papuan fairywrens

P6. E Brewer \*, A Falk  
Connecting the dots: dustbathing in japanese quail through a neoichnological lens

P7. B Hennigar \*, D Wilson  
Effects of anthropogenic light and noise on the vocal behaviour and spatial ecology of birds

P8. K Chenard, RA Duckworth  
Individual variation in brain region size in zebra finches: implications for a structural basis of personality

P9. R Mumme, A Jacobs, A Hileman  
Variation in tail spot size in Hooded Warblers: sexual dimorphism but no evidence of sexual selection

### Communication

P10. C Mendez \*, L Sandoval  
Synchronization and frequency features of highly overlapped duets change according to the context

P11. N Perera \*, CM Rogers  
Possible relationship between vocal communication system and fat reserve in wintering birds: A test of the optimal body mass

P12. K Bonilla Badilla \*, L Sandoval  
Transmission difference of short and long duration elements in the songs of males Clay-colored Thrush in a tropical forest

P13. S Shah, EI Greig, MS Webster  
Form follows function: the effect of function on signal evolution in the genus *Malurus*

P14. J Eiseman, MJ Vonnhof, SA Gill  
Time is of the essence: optimizing when sampling soundscapes for monitoring avian communities

P15. SA Gill, N Fuller, KM Baker, MJ Vonnhof  
Exploring patterns and drivers of acoustic diversity during the dawn chorus

P16. E Shank, D Coss, M Rowley, J Tonleu, K Omland  
Studying novel functions of female song: Vocal response to nest predators in female Eastern Bluebirds (*Sialia sialis*)

P17. K Pagel, GR Kramer, CL Ziegler, K Maley, HM Streblly  
Say what? Inter-annual, inter-specific song switching in Golden- and Blue-winged Warblers





## Communication (Continued)

P19. R Juárez \*, G Barrantes, L Sandoval  
Changes in song repertoire length and song elements use in response to different levels of anthropogenic noise

P20. S Regan, E Bollinger, Z Lui, F Alshammari  
Vocal and genetic variation within a chickadee contact zone in central Illinois

## Foraging

P21. K Bjornen \*, Alec Lindsay  
Avian foraging response to jack pine (*Pinus banksiana*) volatile chemicals

P22. A Zarn \*, C Valle, S Emslie  
Stable isotope and mercury analyses of the Galapagos Islands seabird community

P23. E Sibbald, ET Miller, RC Dobbs  
Foraging observations and insights on Neotropical migrant warblers from Ecuador

## Brood Parasitism

P24. B Peer, M Kuehn, S Rothstein  
Long-term retention of clutch desertion by yellow warblers in the absence of cowbird parasitism

P25. M Dainson, M Mark, M Holford, ME Hauber  
Parasitic eggshell's pigment concentrations do not match host levels in egg color mimetic Striped Cuckoos

## Breeding Biology

P26. R Snowden, R Danner  
Effects of environmental temperature and human disturbance on incubation behavior and egg temperatures of Least Terns (*Sternula antillarum*)

P27. C Dove, E Lankiewicz, M Stanback  
Eastern Bluebirds do not avoid nest cavities with mouse odors

P28. M Lombardo, B Wilson, N Keck, S Keydel  
Some factors associated with egg hatching in Tree Swallows

## Breeding Biology (Continued)

P29. CL Brennan, RJ Trimbath, AW Jones  
Molecular confirmation of hybridization between Northern Parula (*Setophaga americana*) and Cerulean Warbler (*S. cerulea*)

P30. AFLA Powell, J Kirkley  
An instance of hybridization and parental interaction of Great-tailed and Common Grackle (*Quiscalus*)

P31. C Burns, LR Reitsma  
A rapid measure of breeding productivity for the Canada Warbler (*Cardellina canadensis*)

## Community Ecology

P32. N Mirochnitchenko, EF Stuber, JJ Fontaine  
Influence of environmental gradients on the relationship between taxonomic and functional diversity in grassland birds

P33. C Wails, S Borrelle, R Buxton, H Jones  
Impacts of mammalian predators on species- and niche-based community assemblages in the world's seabird biodiversity hotspot

P34. K Kelly \*, D Brown  
Development and analysis of avian index of biological integrity for Kentucky Wetlands

P35. L Keyes, R BaisaJ Yunger  
Nested subset patterns of avian assemblages in wetlands

## Ecotoxicology

P36. S Dzielski \*, CW Twining, NR Razavi, VG Rohwer  
What's in a feather? Reconstructing mercury concentrations through time using museum specimens

P37. M Eng, BJ Stutchbury, C Morrissey  
Tracking the effects of a neonicotinoid insecticide on migratory birds



## Ecotoxicology (Continued)

P38. M Etterson, N Schumaker, K Garber, S Lennartz, A Kanarek, J Connolly  
A spatially explicit model for estimating risks of pesticide exposure to bird populations

## Morphology and Physiology

P39. P Nolan, B Van Skoik, T Hard  
Dynamic color in a black-and-white world: Penguin beak spots as biosentinels in the Antarctic

P40. S Reed, A Fudickar, S Wanamaker, E Ketterson, Indiana University  
Hormone-mediated life-history tradeoffs demonstrated in Dark-eyed Juncos

P41. P Oboikovitz \*, D Swanson  
Environmental heterogeneity and metabolic flexibility in Horned Larks and House Sparrows

P42. D DeRaad \*, AJ Zellmer, W Tsai, JM Maley, JE McCormack  
Geographic variation in Woodhouse's Scrub-Jay

P43. I Hays, I Ljubicic, ME Hauber  
How the egg rolls: the geometry of avian egg movement

P44. E Place \*, JK Augustine  
Variation in organ size between migratory and non-migratory birds

P45. R Knapik, D Luukkonen, S Winterstein  
Michigan's ugly duckling: quantifying color morphs in mute swan cygnets

P46. C Peterson, N Wright, B Tobalske  
Baby birds take flight: ontogeny of intermittent flight in Zebra Finches

## Taxonomy and Systematics

P47. RT Chesser, AJ Welch, HF James, V Bretagnolle  
A UCE perspective on the phylogeny of the albatrosses, petrels, and shearwaters (Procellariiformes)

## Taxonomy and Systematics (Continued)

P48. AW Jones, CL Brennan, K Kaufman, HT Bartlett  
A vagrant kingbird in Ohio represents the first known Western x Couch's Kingbird (*Tyrannus verticalis* x *T. couchii*)

P49. T Roberts, C Opitz, C Crawford  
What you should know about the ornithology collection at the University of Iowa

## Conservation and Management

P50. K Omland, DC Stonko, L Rolle, MG Rowley, JL Christhilf, SB Johnson, L Brace, S Cant  
Breeding habitat of the critically endangered Bahama Oriole: new documentation of extensive breeding in pine forests.

P51. V Cavalieri, Francesca Cuthbert  
Management implications of differential productivity rates at Great Lakes Piping Plover nest sites

P52. S Rockwell, JL Stephens  
Using birds as ecological indicators to evaluate the success of riparian restoration via beaver dam analogues (BDAs)

P53. B Fournet, P Nolan ♦  
Determining impacts on Least Tern breeding colonies along a gradient of human disturbance

P54. A Westwood, D Lambert, L Reitsma ♦  
Bridging the research-management divide: A collaborative spatial approach to conservation for species at risk using the Canada Warbler (*Cardellina canadensis*)

P55. E Rowan, C Putnam  
Conservation and Management of the North American Black Tern (*Chlidonias niger surinamensis*) in Michigan

P56. E Matseur, FR Thompson III, JJ Millspaugh, BE Dickerson, MA Rumble  
Habitat associations and abundance of birds in the Black Hills and Bear Lodge Mountains of South Dakota and Wyoming



## Conservation and Management (Continued)

P57. M Roach, FR Thompson III, T Jones-Farrand

Songbird nest success is positively related to vegetation structure and tree thinning in managed pine-oak savanna and woodland in the Ozark Highlands, Missouri

## Quantifying Scientific Impact

P58. S Dudley, N O'hanson

Altmetrics – what are they good for?

## Birds in Society


P59. D Bird, K Otter

The Canada Jay -- A National Bird for Canada

## Urban Ecology 1

P60. Z Kruyf, JL Atma, HN LaCroix, JL Van Donselaar, DS Proppe

Urbanization alters fear behavior in black-capped chickadees



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## Thursday 7:00 pm Big Ten A

### Evolution

P61. N Souza, M Bonfitto, S Chaudhari, J Witkowski, M Hanson, S Reddy  
Geometric morphometrics and the evolution of bill shape in babblers (Timaliidae)

P62. L Céspedes \*, E Bonaccorso, D Cadena, MA Castro, A Cuervo, J Gómez, J Pérez, C Witt  
Vocal, color and genetic variation across a wide hybrid zone in Andean warblers

### Diseases and Parasites

P63. AE Atkinson, EC Atkinson  
An Assessment of the effects of West Nile Virus on avian species

P64. BR Watkins, K Harakal, CD Winkler, AE Atkinson, EC Atkinson  
Analysis of an avian disease network in the Greater Yellowstone ecosystem: opportunities for undergraduate student engagement while testing null models

P65. K Fake, JC. Owen  
Influence of energetic condition and Vitamin E on West Nile Virus resistance of American Robins

P66. J Smith, KM Baker, SA Gill, MJ Vonhof  
Effects of urbanization on prevalence, diversity, and parasitaemia of avian Haemosporida parasites

### Birds and Agriculture

P67. C Wendt, K Garbach  
The Rangeland Watershed Initiative: Building partnerships to enhance bird habitat on private lands

P68. M Brady, R Eaton, S Wieferich, K Steensma, D Leigh, P Curtis, H Henrichs, J Boulanger, C Lindell  
Abundance of fruit-eating birds in agricultural land cover

P69. A Campomizzi, Z Lebrun-Southcott  
Adult bobolink dispersal following hay harvest during the breeding season

### Habitat Relationships

P71. J Ethier \*, DR Wilson, W Balsom  
Using microphone arrays to determine critical habitat and microhabitat of common avian species in steep decline

P72. P Skrade, CH Grabau, CJ Thielen, JW Stravers,  
Cerulean Warbler habitat use in Northeast Iowa

P73. M Charette, H Soder  
Habitat preference and movement in lek and foraging grounds in the White-collared Manakin (*Manacus candei*)

P74. KE Farley, C Holzapfel  
Anthropocene's effect on habitat choice in early successional species: A preliminary study on the American Woodcock in northern New Jersey

P75. L Elliott, ABracey, G Niemi, D Johnson, T Gehring, G Grabas, R Howe, C Norment, D Tozer  
Habitat associations of coastal wetland birds in the Great Lakes basin

P76. B Edwards, D Gillis  
Modelling habitat loss in Piping Plovers using an environmental agent-based model

### Modeling Approaches

P77. M Florkowski, N Gilbert  
A comparison of occupancy estimates produced by morning versus evening point counts

P79. J Froehly, A Tegeler, B Ross, CMB Jachowski, P Jodice, DS Jachowski  
Loggerhead Shrike occupancy in South Carolina





## Population Ecology

P80. E Shogren, A Boyle

Estimating apparent survival and factors influencing population dynamics of Neotropical birds

P81. S Winnicki, A Boyle

Complex drivers of Grasshopper Sparrow (*Ammodramus savannarum*) nest success

P82. J Newbrey, J Clarke, MG Newbrey

Effects of human disturbance level on yolk carotenoid allocation in Carolina Chickadees

P83. E Bridge, J Ruyle, ID Grady, GP Robinson, WF Oakley, HK Lepage

A low-cost RFID reader and electronics platform for biological research

P84. G Smith, RJ Trimbath, DR Garrett

Nesting success of Hooded Warblers in exotic shrubs: multi-trophic interactions in the forest understory

P85. A Shoffner, D Luukkonen, D Williams, S Winterstein

American Woodcock reproductive rates in relation to forest structure at local and landscape scales

P86. D Coss, EM Shank, MG Rowley, JT Tesleu, KE Omland

Migratory return rates and breeding fidelity in Eastern Bluebirds (*Sialia sialis*)

## Annual Cycle

P87. E Ames, C Tonra

Carry-over cascade: linking winter habitat, arrival, breeding, and post-fledging survival in a migratory songbird

P88. B Boyd \*, S Hayes, B Stutchbury

Breeding season carry-over effects of forest fragmentation on Wood Thrush (*Hylocichla mustelina*)

## Urban Ecology 2

P90. C Stuart, EE Grabarczyk, MJ Vonhof, SA Gill

Light, noise or social factors? Exploring influences on the onset of dawn song in house wrens

P91. I Moreno-Contreras \*, H Gómez de Silva, M Ortiz

Disentangling the evolutionary history and functionality of avian assemblages in a city of the Chihuahuan Desert

P92. S Essaian, EM Wood

The importance of the Los Angeles urban forest for sustaining migratory bird populations

P93. N Faison, E Branch♦, EE Grabarczyk, MJ Vonhof, SA Gill

Does anthropogenic noise disrupt parental care in house wrens?

## Molecular Ecology

P94. C Thow \*, B Lyon, C Wells, J Eadie

Are you my mommy: assigning parentage in populations with kin structure and incomplete parent sampling

P95. MA Jusino, J Skelton, MT Banik, JM Palmer, L

Blanc, S Goodman, JR Walters, DL Lindner  
Methods matter: a better way characterize the diets of insectivorous birds using fecal DNA

P96. T Nguyen, JW Fitzpatrick, AG Clark

Investigating the genomic consequences of a precipitously declining Florida-scrub jay population

P97. K Heath, WC Conway, DA Ray, N Platt

Effectiveness of CHD1 sex-linked chromosome primers in sexing Snowy Plovers on the Southern Great Plains

P98. M Roeder \*, CE Hill, S Taylor, S Woltmann

Population genetic characteristics of Seaside Sparrows (*Ammodramus maritimus*) in Texas

P99. B Crosby, A Tigano, GJ Robertson, VL Friesen

Colony-specific genetic markers for the assessment of hunting impacts on thick-billed (*Uria lomvia*) and common (*Uria aalge*) murre

## Geonomics



P100. A Arnaiz-Villena, E Muñiz, J Palacio-Gruber, C Campos, B Tejedor, M Martin-Villa, V Ruiz-del-Valle  
Intron study and evolution of wild songbird MHC genes: minimum essential MHC does not exist

P101. Y Ji, JA DeWoody, SJ Hackett  
The correlation among microsatellites, genome size, metabolic rate, and body mass in birds

P102. Z Gayk, AR Lindsay  
Genomic evidence for aquatic adaptation in the Common Loon (*Gavia immer*)

P103. S Aguillon, RG Harrison, IJ Lovette  
Genomic data distinguish phenotypically distinct birds despite low levels of divergence

## Phylogeography

P104. SA Jiménez, ZR Hanna, M Fernanda Asturias, RCK Bowie  
Phylogeography of the Green-throated Mountain-gem (*Lampornis viridipallens*)

P105. R Herman, D Dittmann, M Harvey  
Phylogeography of a widespread seabird (*Ardenna pacifica*) using genome-wide markers

## Movement Ecology

P106. M Bishop, K Botting, A Tuttle  
Foraging and residency behavior of wintering American Kestrels (*Falco sparverius*) in central Michigan

P107. A Fetterman, L Kiziuk, D Brinker, S Weidensaul, T Alleger  
Building a Northeastern Wildlife Tracking Network – The Northeast Motus Collaboration

P108. C Ward \*, T Diamond, J Nocera  
Determining breeding home ranges of a rare, high-elevation specialist, the Bicknell's Thrush (*Catharus bicknelli*) in north-central New Brunswick

P109. JD Ross, JE Ruyle, ES Bridge  
Make movement advancements for autonomous radio telemetry networks

## Migration

P110. D Stotz, P Clyne, M Speer  
Changing phenology of landbird migration at Chicago, Illinois: multiple datasets

P111. A Beauchamp, Y Morbey, C Guglielmo  
Mechanisms underlying migratory protandry in the sexes and plumage morphs of the White-throated Sparrow

P112. J Tinklenberg, J Dunning, J Buler  
Monitoring songbird stopover in fragmented forest-agricultural systems

P113. J Owen, D Sandhal, A Pickett, Y Oguchi  
Variation in fruit consumption by landbirds at a stopover site during fall migration

P114. S Wolfe \*, AJ Arnold, MJ Schnupp, BM Ballard  
Habitat Associations of Warblers Migrating Along the Lower Texas Coast

P115. F Moore, TJ Zenzal, JJ Buler  
A multi-scale approach to detecting the response of migratory land birds to changes in habitat availability

P116. C Tonra, L Kearns, K Stein  
Migratory movements and wintering locations of a threatened population of Black-crowned Night-Herons

P117. S Kolbe \*, A Bracey, G Niemi, M Etterson  
Visible migration counts of the Common Nighthawk (*Chordeiles minor*) on the north shore of Lake Superior

P118. A Fournier, MC Shieldcastle, T Kashmer, KA Mylecraine  
Comparison of arrival dates of rail migration in the southwest Lake Erie Marshes, Ohio, USA

P119. M Anderson, J Owen, K DeMoranville, W Carter, S McWilliams  
Effect of dietary antioxidant and fatty acid levels on immune function of European Starlings following endurance flight.

P120. J Burger, N Tsipoura, M Gochfeld  
Metal levels in blood of shorebirds reflect levels in their prey (horseshoe crab eggs)

# Exhibitors

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\* = Presenting author

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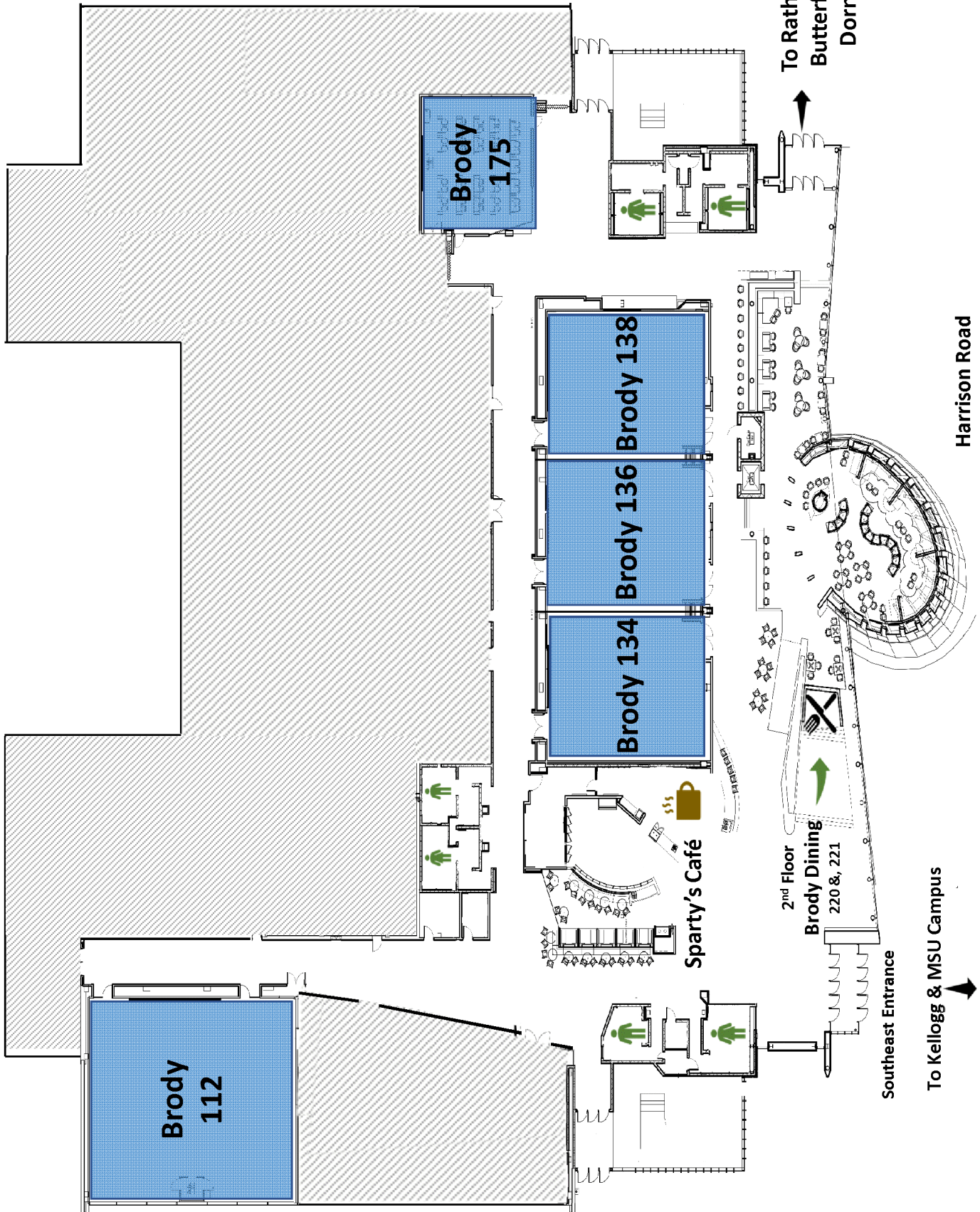
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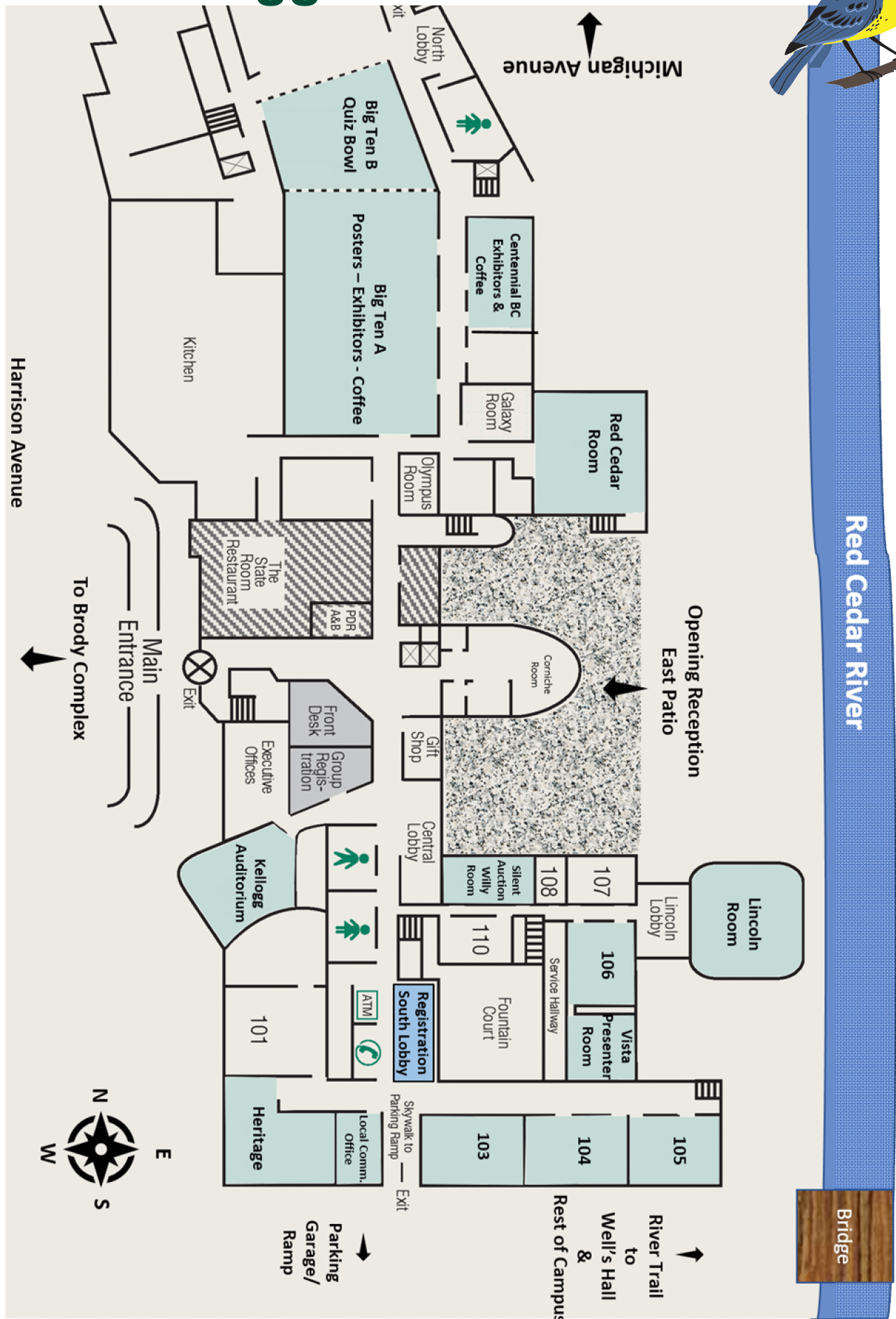


Michigan Avenue





# Kellogg Center Floor Plan







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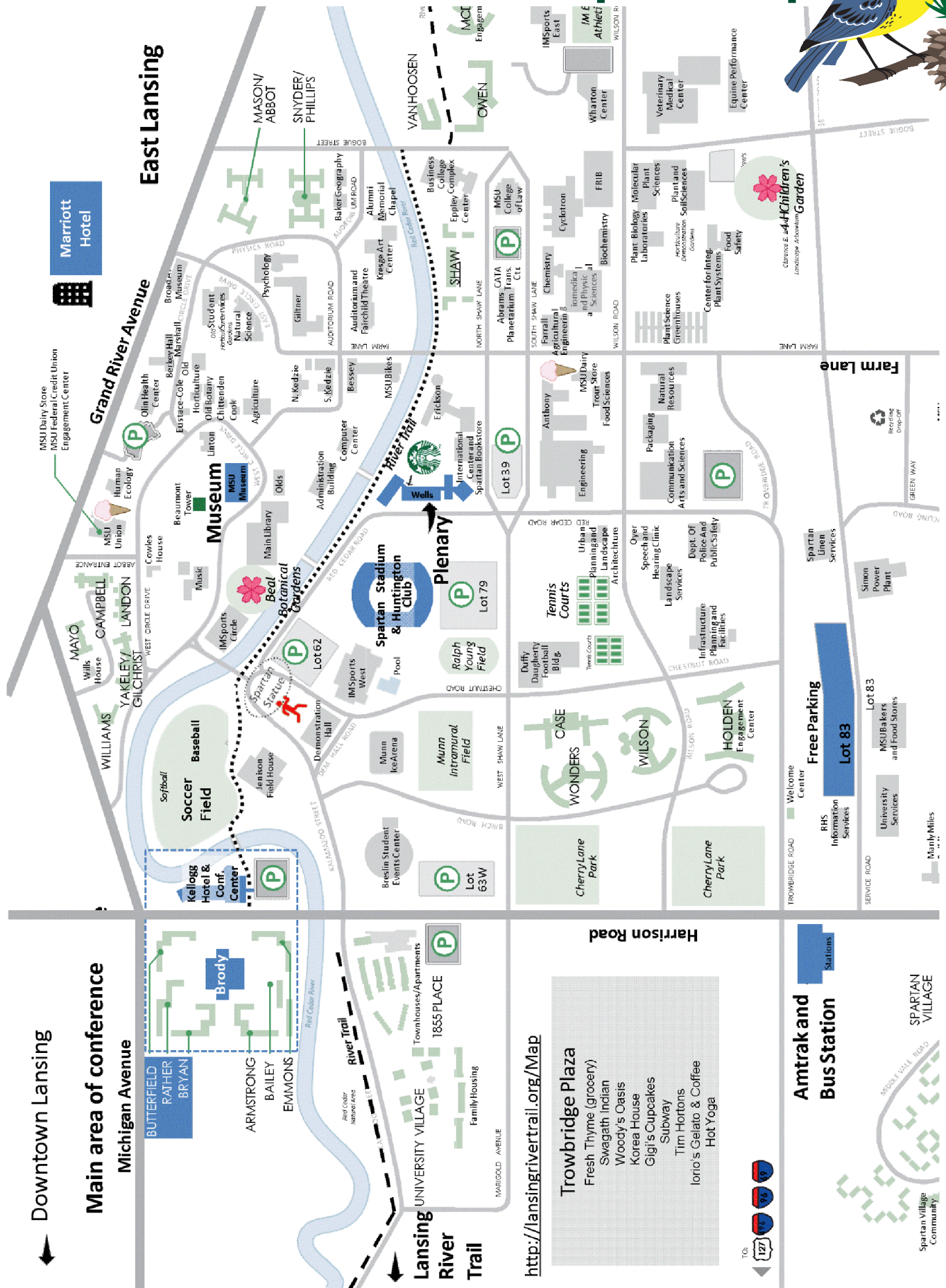


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# Campus Map



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Power-saving microprocessor

More than a terabyte of data storage capacity

Easy-to-use setup and scheduling tools

Small, backpack-friendly design footprint

Song Meter recorders feature easy-to-use scheduling tools, large data storage capabilities, and low power consumption – a unique combination of features that provide the longest deployment times of any acoustic recorders available today.

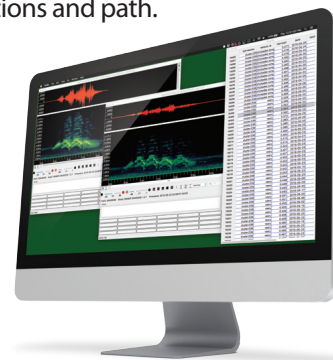
**The Song Meter SM4** lets you record two sources of audio at the same time (e.g. birds and frogs). Record in stereo or mono using the built-in microphones, or connect up to two cabled microphones/hydrophones.

**Easy to program.** Song Meters feature improved, more intuitive programming and scheduling tools. The built in programs are tailored to acoustic research needs, and the new Scheduler tool makes it easy to create custom schedules.

**Longest deployment times available.** The new low-power microprocessor combined with 4 D-size batteries enable the longest deployment times of any other recorder available.

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Song Meter SM4 acoustic recorder

