



Program Book

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2021 Joint Virtual Meeting

#2021AOS_SCO

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Host Societies

American Ornithological Society

The American Ornithological Society (AOS) is an international society devoted to advancing the scientific understanding of birds, enriching ornithology as a profession, and promoting a rigorous scientific basis for the conservation of birds. As the largest ornithological member-based society in the world, AOS produces scientific publications of the highest quality, hosts intellectually engaging professional meetings, serves ornithologists at every career stage, and informs public policy on issues important to ornithology and ornithological collections.



The AOS is distinguished by its tremendous collective expertise, including eminent scientists, conservation practitioners, early career innovators, and students.

AOS publishes two international journals—[*Ornithology*](#) and [*Ornithological Applications*](#). The Society's [*Checklists*](#) are the official source for taxonomy and nomenclature for North and South American birds. The AOS is also a partner in the online publication of [*Birds of the World*](#) with the Cornell Lab of Ornithology.

Society of Canadian Ornithologists–Société de ornithologistes du Canada

The Society of Canadian Ornithologists–Société de ornithologistes du Canada (SCO–SOC), an organization of Canada's ornithological community, aspires to the goals of:

Research: to encourage and support research that aims to understand and conserve Canadian birds.

Community: to serve as a professional society for Canadian ornithologists.

Conservation: to work with professional ornithological societies in North America and worldwide to promote Canadian interests and the global conservation of birds.

Communication: to disseminate knowledge of Canadian birds through a newsletter and a scientific journal.

Excellence: to recognize excellence in pure and applied research, conservation and mentorship within the Canadian ornithological community.

Responsibility: to speak for the Canadian ornithological community on public issues.



The SCO–SOC administers awards; provides interconnection with other professional ornithological societies; and produces two publications, the tri-annual newsletter, [*Picoides*](#), and professional, peer-reviewed, electronic, and entirely open-access journal [*Avian Conservation and Ecology*](#), published jointly with Bird Studies Canada.



Welcome to 2021 AOS-SCO/SOC

Welcome to the virtual joint meeting of the American Ornithological Society (AOS) and the Society of Canadian Ornithologists-Société des ornithologistes du Canada (SCO-SOC). We are pleased to convene the 139th annual meeting of AOS and the 39th annual meeting of SCO-SOC. In this fully virtual conference themed “Birds of Many Feathers Flock Together”, we strive to bring together ornithologists from diverse backgrounds who share the goal of advancing science and conservation of birds, and supporting the next generation of ornithologists.

Diversity, equity and inclusion were at the forefront of our planning for this meeting. We gather virtually in the second year of a pandemic that exposes the societal damage of centuries of colonialism and systemic racism. As we collectively envision a path forward, we acknowledge that both AOS and SCO-SOC have a lot of hard work ahead to foster authentic diversity in the field of ornithology, building a professional field that is just, equitable, and inclusive. To propel this work, we have planned a meeting that, we hope, will hasten much needed change in the field.

We open our program learning about disability and access in birding and the kick start of our Birding competition. Our featured speakers, who are highly successful scientists that have re-invented and expanded the field in numerous ways, bring a diverse perspective on their own paths in professional ornithology and academia. We are thrilled to feature a special roundtable highlighting the work of three Black ornithologists who, through creativity and mentorship, are empowering the next generation of bird enthusiasts. Finally, numerous exciting networking, outreach, competitions, and social activities offer participants at all career stages an opportunity to reconnect with their societies.

Our commitment lies in making the virtual meeting experience as intuitive, educational, and enjoyable as possible. The EventPilot platform is your main conduit to a full scientific and social program. The AOS & SCO-SOC Slack space is a great way to connect in themed groups or through private messaging. Amplify your talk and chat with other meeting participants on Twitter following the conference hashtag **#2021AOS_SCO**. Workshops happen the week before the scientific program, from 2–6 August. The entire scientific program including plenaries, symposia, roundtable discussions, contributed papers, and virtual posters will be recorded and available for 90 days following the conference so that you can catch up on any missed events. We look forward to seeing you on our screens even as we continue to hope to meet again in person in 2022.

In gratitude,
Co-Chairs of the AOS & SCO-SOC 2021 Virtual Meeting Coordination Committee
Sushma Reddy, Ph.D. Associate Professor and Curator, University of Minnesota
Letícia Soares, Ph.D. Postdoctoral Associate, Western University



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Premier Level



[Cornell Lab of Ornithology](http://www.cornelllabofornithology.org)

Platinum Level



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Environnement et
Changement climatique Canada

[Environment and Climate Change Canada](http://www.ec.gc.ca)

Gold Level



[National Audubon Society](http://www.audubon.org)

Silver Level



[Birds Canada](http://www.birdscanada.org)



science for a changing world [USGS Ecosystems](http://www.usgs.gov)

Bronze Level



[Avinet](http://www.avinet.ca)



[Waterford Press](http://www.waterfordpress.com)



[Wildlife Acoustics](http://www.wildlifeacoustics.com)



[Software Sustainability
Institute](http://www.software-sustainability.org)



[Birds & Beans](http://www.birdsbeans.com)



[Journal of Avian Biology](http://www.journalofavianbiology.com)



[Titley Scientific](http://www.titleyscientific.com)



[Lotek](http://www.lotek.com)

Partner Level



[FLAP Canada](http://www.flapcanada.org)



Organizers and Committees

Meeting Coordination

Sushma Reddy (Co-chair)
Letícia Soares (Co-chair)
Ron Mumme
Nicola Koper
Erin Morrison
Allison Schultz
Evan Adams
Jen Walsh
Sahas Barve
Jennifer Houtz
Nandadevi
Cortes-Rodriguez
Thea Carpenter
Danielle Ethier
Matt Carling
Morgan Tingley
Dorothy Hill
Oliver Love
César Estevo
Kevin Fraser
Taylor Brown
Emily Williams
Ellen Jamieson

Accessibility

Allison Schultz
Sahas Barve
Letícia Soares
Oliver Love

Early Professionals

Nandadevi
Cortes-Rodriguez
Danielle Ethier
Evan Adams

Scientific Program

Ron Mumme (Chair)
Thea Carpenter
Evan Adams
Medhavi Ambardar
Andrew Beauchamp
Pilar Caicedo
Emily Cohen
Stephen Dinsmore
Shane Dubay
Mike Harvey
Rosario Jacoby
Jill Jankowski

Allison Johnson
Jackson Kusack
Troy Murphy
Anna Pidgeon
Allison Shultz

Student Presentation Awards

Matt Carling (Co-chair)
Morgan Tingley (Co-chair)
Jen Walsh
Dorothy Hill

Volunteer Coordinators

Erin Morrison (Co-chair)
Karen Lau (Co-chair)

Diversity, Equity & Inclusion

Sahas Barve
Oliver Love
César Estevo
Marcella Baiz

Marketing & Communications

Christine Schmidt
Taylor Brown

Safe Meeting

Jeanne Fair (Chair)
Jeff Brawn
Kevin Fraser
Jen Walsh
Valentina Ferretti

Student Affairs

Jennifer Houtz
Ellen Jamieson

Virtual Platform

Allison Schultz
Taylor Brown

AOS Support Staff

Melinda Pruett-Jones
Crystal Ruiz
Christine Schmidt
Chris Mulvaney
Lauren Gates

Mark Penrose
Mint Jang

Storytelling

Emily Williams
Desiree Narango
Nicholas Mason
Scott Taylor

Merchandise

Lauren Gates
Christine Schmidt

Tech Support

Chris Mulvaney
Erin Morrison

Program

Jen Walsh
Sushma Reddy
Ron Mumme
Lauren Gates

Logo

Christine Schmidt
Joe Gervin, designer

In Memoriam

Christine Schmidt
Chris Mulvaney
Robert Montgomerie
Andy Jones
Ted Anderson

Fundraising

Lauren Gates

Technical Support Volunteers

Adrián Ciprés Chávez (SAC)
Alexis Earl (SAC)
Alison Salas (SAC)
Allison Shultz
Amanda Kemp (SAC)
Amanda Navine (SAC)
Andria Kroner
Anna Lippold
Aranya Iyer
Brendan Graham (SAC)
Cara Christensen (SAC)
Celia McLean

Christine Santos
David Vander Pluym
Diego Beltrán
Dorothy Zahor (SAC)
Dustin Brewer (SAC)
Enya Astrid Cordoba Cuevas
Erin Morrison
Evan Adams
Harikrishnan C P
Ilsa Griebel
Jenna McDermott
Jennifer Bouchenot (SAC)
Jenny Uehling
Jessica Bravo-Cadena
Karen Ong (SAC)
Kelsey Bell
Kristen Rosamond
Kristin Brunk (SAC)
Lan-Nhi Phung
Lauren Schaale
Maggie MacPherson
Moshe Muller
Natasha Murphy (SAC)
Nicole Moody (SAC)
Noelle Mason (SAC)
Oona Takano (SAC)
Rachel Gingras (SAC)
Rebecca Howe (SAC)
Stephanie Augustine
Tatjana Washington (SAC)
Varalika Jain (SAC)
Ximena Alva Caballero

Networking Moderators

Elizabeth Wommack
Lauryn Benedict
Nandadevi Cortes
Sarah Luttrell
Shailee Shah

Translation Volunteers

Andrea Aguilera
Daisy Alvarado Martinez

Dimaris Colon Molina
Eric Torres-Rivera
Josue Corrales
Juliana Rodriguez Fuentes
Leonardo Doig
Rai Delgado
Sandra Cuadros
Steven Sevillano
Thomas Chen
Vania Tejeda-Gómez
Vianney Cupiche
Yolanda Michelle Acuña
Campos
Yolotli Morales
Alysha Riquier
Audrey Guyonnet
Ines Moran
Jeremie Tixier
Samuelle Simard-Provençal
Stephanie Symons
Vincent Lamarre
Molly McDermott
Felipe Barros da Cunha
César Estevo
Lia N. Kajiki
Manuella de Souza
Isabela Laterza
Michelle Baptista
Renata Alquezar
Lays Viturino de Freitas
Bruna Costa
Layse Lucas
Hevana Lima
Paulo Silva Neto

Session Moderators

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Nico Arcilla
Tom Auer
Daniel Baldassarre
Colleen Barber
Phred Benham
Juliana Benitez Saldivar
Thomas Benson

Kristin Brunk
Harikrishnan C P
Garth Casbourn
David Chang van Oordt
Santiago Claramunt
Paul Dougherty
Brandon Edwards
Charles Francis
Barbara Frei
Daniel Goldberg
Ilsa Griebel
Daniel Hooper
Kyle Horton
Rebecca Howe
Autumn Iverson
Varalika Jain
Sarah Jennings
Oscar Johnson
Hannah Justen
Sarah Kendrick
Jackson Kusack
Steffi LaZerte
Anna Lello-Smith
Katie Leonard
Maggie MacPherson
Audrey Martin
David Mehlman
Jack O'Hara
Jen Owen
Lan-Nhi Phung
Ahva Potticary
Lucas Redmond
Dustin Reichard
Carlos Rodriguez-Saltos
Karina Sanchez
Natalie V. Sánchez
Thibault Tamin
Jenny Uehling
David Vander Pluym
Silu Wang
Luke Wilde
Sarah Winnicki
Elizabeth Wommack

Thank you to all the judges of student presentations!



General Information

Event Pilot

All scientific and social programming can be accessed through [EventPilot](#). To login to EventPilot, use the email address you used to register for the conference as your username and your last name as your password. You can access EventPilot via:

1- a web browser (Chrome strongly recommended; link above); or

2- a mobile app (downloading the “EventPilot Conference App” from your app store- [Apple](#), [Google](#)); use “AOSSCO21” as the conference code. With the mobile app, you can also send messages to other meeting attendees.

Help Desk

Have a question? Contact us at meeting@americanornithology.org. Alternatively, post to the **#a_techhelp** channel on slack and a member of our team will be with you shortly!

Talk and Poster Instructions

Please see our [Virtual Resources](#) page with presenter guides for each presentation type.

Slack Channels

Connect with fellow AOS & SCO-SOC meeting attendees through our AOS-SCO 2021 Slack, which offers a way for members of the community to communicate with each other outside of email or social media, either via direct message or topic-driven threads. You can also use this platform to view announcements or ask for help with technological issues. Join the conference Slack with the link from your emailed welcome kit!

Sponsors

Please visit our [Virtual Exhibit Hall](#) to learn more about the wonderful sponsors who helped make this year’s meeting possible. You can communicate directly with sponsors on the conference Slack. Just look for sponsor channels in the list under “e_”. We also encourage you to attend live Sponsor Presentations throughout the week! These will take place, Tuesday through Thursday, from 4:00-5:00 p.m. EDT. This is a great opportunity to connect with your favorite organizations and learn about exciting new products, programs, and research. See the full schedule of presentations under “Sponsor Presentations” in the Special Networking Events section for more information.



Policies

Virtual Meeting Code of Conduct Policy

The Meeting Code of Conduct Policy* ("Policy") is intended to set clear expectations of professional behavior of individuals participating in the AOS & SCO-SOC 2021 Virtual Meeting, to ensure that all participants feel safe and welcome, and to ensure the event is a positive experience for all. This Policy applies to all "Participants" in this meeting, meaning organizers, attendees, speakers, exhibitors, award recipients, staff, contractors, volunteers and guests. The Policy's overarching objective is advancing productive outcomes, with safety, full participation and belonging for all Participants in this event and in the ornithological community.

The host societies of the AOS & SCO-SOC 2021 Virtual Meeting ("Societies") are dedicated to providing an inclusive and equitable environment that is collaborative, supportive, and engaging for everyone involved, and that is free of intimidation, discrimination, harassment, and retaliation. We expect all Participants to help in our mission by being respectful and considerate of each other, providing constructive critique, and embracing the multitude of opinions offered by participants.

The AOS & SCO-SOC 2021 Virtual Meeting is intended to foster effective, open and honest communications and to promote equity and equality of opportunity and treatment for all participants. It is imperative that Participants conduct themselves professionally toward all, engage in courteous and respectful interactions, and recognize the intellectual property of others participating in the event. All forms of communication among virtual event Participants fall under the jurisdiction of this Policy. These include public and private communications in the meeting's virtual platform, in virtual breakout rooms, via electronic chat functions (e.g., Q/A box, Zoom Chat), emails, texts (including via platforms such as Signal, Slack, and Whatsapp), social media, phone calls, and other forms of written, verbal, and non-verbal (including visual) communication. In addition, communication, as described above, occurring after the virtual event, but pertaining to content from the event and/or where contact information of an event Participant was procured during the event may also fall under the purview of this Policy.

Expectations of Participants

Harassment between Participants of the AOS & SCO-SOC 2021 Virtual Meeting will not be tolerated in any form. The definition of harassment includes, but is not limited to, any communication or behavior towards another Participant that involves offensive gestures, verbal and written comments, posts on the internet and social media, deliberate intimidation, stalking, harassing photography or recording, sustained disruption of talks or other events, inappropriate electronic contact, microaggressions, bullying, and unwelcome attention. Participants asked to stop any harassing behavior by anyone are expected to comply immediately, regardless of their intent. Discussions among and between Participants should be focused on the Meeting topic at hand and all Participants must be able and welcome to equitably and effectively participate. Participants may courteously and respectfully express an opinion, raise research or describe an experience ("articulation") that is at odds with the opinions of others. Such an articulation must be part of an on-point discussion of the Meeting topic at hand and offered in a manner that does not interfere with others' reasonable ability to participate fully.

By registering for and attending this Event, Participants agree to allow the Society to use their photo or a video of them in any Society publication, promotion, on the website or social media pages. The AOS & SCO-SOC 2021 Virtual Meeting will be recorded and the content will be made available to participants through the Meeting Online Conference organizer for a period of time. Only the Meeting organizers representing the Societies, and those explicitly authorized by the



organizers, may (a) take/make or distribute (in any medium) audio- or visual-recordings of the Meeting or Participants or (b) distribute them (via social media or other means). Those wishing to take screen-captures and/or share information from the Meeting via social media must adhere to the [AOS & SCO-SOC 2021 Virtual Meeting Social Media & Commenting Policy](#). Violations of the Social Media & Commenting Policy are also in breach of this Policy.

Participants are required to disclose on the registration form whether they are currently on-leave or subject to any restrictions and/or restorative remedies in their activities related to an allegation, investigation, and/or finding of misconduct in their professional or personal life. Participants also must disclose whether, in the last five (5) years, they have been discharged or were forced to resign from work or other activities due to an allegation or finding of misconduct. Registrants who fail to disclose incidents as described above is a violation of this Policy. Meeting Organizers will review any disclosure on a case-by-case basis and may determine in their discretion whether, due to the nature and circumstances of the allegation or finding, the person's presence is likely to result in a safety concern, or to be disruptive or burdensome to the Meeting or other Participants' reasonable ability to fully participate. If so, the Meeting Organizers may, in their discretion, deny participation to the person. In denying participation, the Meeting Organizers will not have investigated the matter and are not making a judgment about whether the person who makes the disclosure has engaged in misconduct. Any statement or action to the contrary is not authorized by the Meeting Organizers. However, the Meeting Organizers prioritize preventative safety and non-disruption measures in the interest of many Participants, over the interests of one or a few, if the two must be weighed.

Reporting an Incident

Any event participant covered by this Policy who has a concern within the reach of this Policy, or has any other concerns about an individual who has registered, or an individual's behavior at the Event that interferes with the intent of the virtual event, should report their concern immediately to the [Safe Meeting Committee](#) at this email address:

aos-sco-2021-safe-conduct@americanornithology.org. The Safe Meeting Committee intends to regularly monitor reports made on-line before, during, and after the conference; however, it is important to email the Meeting Organizers at meeting@americanornithology.org if you do not receive a prompt reply to an on-line report to ensure a timely response. The Safe Meeting Committee is dedicated to treating every incident with the utmost respect, sensitivity, and dignity.

If you would prefer that an individual member of the committee specifically address your question or issue, please put their name in the subject line (e.g., ATTN: Name) in an email addressed to: aos-sco-2021-safe-conduct@americanornithology.org. Participants may make an anonymous report, however, anonymity typically limits the extent to which the Safe Meeting Committee can investigate and/or respond to the reported concern.

The Safe Meeting Committee will maintain strict confidentiality in all investigative procedures to the extent permitted, as long as the rights of others are not compromised or in its judgment and discretion, safety or law requires otherwise. Pertaining to confidentiality:

- Participants are required to respect confidentiality of the identities of any individuals most directly involved in a conduct concern, while it is being reviewed and addressed. Failure to do so is a violation of this Policy. An "individual most directly involved" means the Participant who raises a conduct concern, any witness, the identified target, or the accused Participant.
- If an accused Participant is determined to have violated this Policy, the Meeting Organizers may make that disclosure, in the Societies' discretion.
- Limited disclosure of the identity of individuals most directly involved may be needed for the Safe Meeting Committee to carry out various options to resolve a conduct concern.
- Before raising the specific conduct concern, a Participant may ask the Safe Meeting Committee up front about the options for resolution of certain types of conduct concerns

and the disclosures that may be necessary to pursue them, if that is a worry.

Disciplinary Action

Individuals found to have engaged in behavior prohibited by this Code, have not properly disclosed during registration, as well as those making allegations of a breach of the Code in bad faith, will be subject to disciplinary action as determined by the AOS & SCO-SOC 2021 Virtual Meeting Coordination Committee. The AOS & SCO-SOC 2021 Virtual Meeting Coordination Committee may take any action they deem appropriate ranging from a verbal warning or ejection/prohibition from the specific activity in question (e.g., workshop, symposia or even the entire conference), banning them from future AOS and/or SCO-SOC virtual events, conferences or meetings, revoking membership in the Society(ies), and/or to the reporting of misconduct to their employer and research funders. For more information, see the [AOS Code of Professional Conduct](#) and complaint, investigation/enforcement procedures, including any restorative practice and other community-building options.

Retaliation & Bad Faith Accusations Are Prohibited

AOS & SCO-SOC 2021 Virtual Meeting organizers will not tolerate any form of retaliation – including seeking to violate the confidentiality of a reporting individual – against individuals who file a complaint or assist in an investigation, nor any individuals suspected of doing so. Prohibited conduct includes any activity that would discourage someone from resisting or complaining about future discrimination/harassment. Bad faith accusations, in which intentionally false and/or malicious reporting of violations against another attendee are made, are also prohibited. Retaliation and bad faith reporting are serious violations of the Policy and, like any breach of the Code itself, will be subject to disciplinary action.

Questions & Appeal

Any questions regarding this Policy should be directed to the Safe Meeting Committee at aos-sco-2021-safe-conduct@americanornithology.org. In the event that an individual involved in any reported incident is dissatisfied with the disciplinary action, they may appeal to a panel appointed by the Meeting Organizers.

Accessibility Policy

We are committed to making the AOS & SCO-SOC 2021 Virtual Meeting a just, diverse, equitable, and inclusive conference environment. We have created an [advisory committee](#) dedicated to organizing a virtual meeting that is equally and equitably accessible to as many attendees as possible. To the best of our ability, we will follow the guide [Hosting Accessible Remote Meetings and Events](#) to maximize accessibility in the new virtual conference format.

We will work towards ensuring that the virtual meeting community understands the accommodations available to them and how they can contribute to an accessible meeting.

We strongly encourage all meeting participants to adhere to the accessibility guidelines we provide, in order to create an inclusive and equitable conference environment.

Diversity & Inclusion Statement

The AOS & SCO-SOC 2021 Virtual Meeting warmly encourages participation in our meetings by all individuals. We welcome participants of all races, ethnicities, nations of origin, citizenship statuses, religions, ages, marital statuses, sexual orientations, gender identities and/or expressions, disabilities, and any other equity-denied groups. We acknowledge the role of systemic racism and prejudice in the historical and current oppression and erasure of Black, Indigenous, and other persons of color and members of LGBTQIA+ communities. We are dedicated to providing a safe,

accessible, open, respectful, and bias-free environment, and to increasing the representation and retention of racialized persons, minoritized groups, and their intersectional identities in meetings, membership, leadership, volunteers, and staff. We are dedicated to achieving equity for all and commit to anti-racism and anti-discrimination. We embrace diversity for its power to develop new ideas and to foster a productive environment through the introduction of different backgrounds, perspectives, and experiences. In representing the field of ornithology, we strive to lead by example as role models for equity, diversity, and inclusion.

Language Policy

The official languages of the AOS & SCO-SOC 2021 Virtual Meeting are English, French, Spanish, and Portuguese. To honor the conference theme “[Birds of Many Feathers Flock Together](#)” we strive to provide an equitable and inclusive experience to all participants. While our special events, keynote and plenaries will be held in English, we are working towards facilitating a multilingual meeting on several fronts, from [encouraging speakers](#) to present in any one of the four official languages of the virtual meeting they are most comfortable in, to facilitating networking through the conference online platform (EventPilot). The AOS & SCO-SOC 2021 Virtual Meeting will have opportunities for participants to express their shared enthusiasm for ornithology in all four languages.

If you have suggestions or questions about the virtual meeting language policy, please contact meeting@americanornithology.org.

Social Media & Commenting Policy

AOS & SCO-SOC 2021 Virtual Meeting is a pro-social media event and meeting organizers actively encourage the sharing of conference content. Sharing ornithological science with the public via social media is one way to educate the public, which can only help the support of the science and its application. Promotional content for the meeting will be aggregated online using the **conference hashtag #2021AOS_SCO**.

AOS & SCO-SOC 2021 Virtual Meeting presenters are encouraged to include personal and/or project social media handles and hashtags on slides and posters. We recommend adding relevant handles and hashtags to at least the opening slide, but preferably to all slides. For those without personal/project handles or hashtags, consider including the conference hashtag or a social media icon on slides to let people know you are supportive of them posting about your work on social media.

AOS & SCO-SOC 2021 Virtual Meeting presenters must opt out if they do not want their presentation or research to be featured in social media posts: this is best achieved by placing a “no social media” symbol on slides or materials. If presenters do not opt out in this manner, conference organizers and/or attendees can share published research presented at the conference without consent.

AOS & SCO-SOC 2021 Virtual Meeting organizers are not responsible for attendees commenting or live tweeting, but ask that attendees respect presenters’ wishes. Please give credit to presenters/researchers whose presentation and/or research are featured in your post.

Anyone may participate in conversations on the AOS & SCO-SOC 2021 Virtual Meeting’s host Society’s social media channels, but:

- The meeting’s host Societies have the right to delete posts or comments containing spam, irrelevant remarks, or items that do not align with the mission/integrity of the AOS & SCO-SOC 2021 Virtual Meeting or violate a host Society’s social media or professional

- ethics policy.
- Personal attacks, promotion of violence or illegal activities, offensive material, or profanity will be deleted.
- AOS & SCO-SOC 2021 Virtual Meeting reserves the right to ban users who violate this policy.

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

AOS & SCO-SOC 2021 Virtual Meeting participants can report violations of this policy by contacting the meeting's Professional Ethics & Safe Conduct Committee at aos-sco-2021-safe-conduct@americanornithology.org.

It is recommended that presenters and those sharing on social media be mindful of how photos of birds (and other animals), especially birds in the hand, may appear to the public. Some of the questions to consider before sharing a photograph include: Are safe and taxonomically-appropriate grips being used? Does the bird appear in any way to be stressed, disheveled, or in an unnatural position? Is it a “trophy shot” (prolonging handling time), or was it taken during banding and provides educational material such as molt? For further suggestions on sharing photos of birds in the hand, see the [North American Banding Council's photographic guidelines](#)



Schedule

Program at a Glance

PROGRAM AT A GLANCE (All times in U.S. Eastern (GMT -4)	
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Monday, August 9	
AOS & SCO-SOC 101	10:00-10:30 am
Featured Presentation: Birdability: Because birding is for everybody and every body!	10:30-11:30 am
Opening remarks and Keynote Speaker: J. Drew Lanham	12:00-1:30 pm
Networking - Chirp & Chirp!	1:30-2:00 pm
Symposia and general paper sessions	2:00-3:30 pm
Special networking events	4:00-5:00 pm
Opening Reception and Quiz Bowl	5:30-7:30 pm
Tuesday, August 10	
Symposia, lightning talks, and general paper sessions	10:00-11:30 am
Plenary Speaker: Scott Edwards, AOS Early Career Symposium (part 1)	12:00-1:30 pm
Networking	1:30-2:00 pm
Symposia, lightning talks, and general paper sessions	2:00-3:30 pm
Round tables and special networking events	4:00-5:00 pm
Special Networking Event: Sponsor Presentations	4:00-5:00 pm
Poster sessions	5:30-7:00 pm
Rainbow Lorikeets LGBTQIA+ & Allies Social	7:00-8:30 pm
Wednesday, August 11	
Symposia, lightning talks, and general paper sessions	10:00-11:30 am
Plenary Speaker: Alice Boyle	12:00-1:30 pm
Networking	1:30-2:00 pm
Symposia, lightning talks, and general paper sessions	2:00-3:30 pm
Round tables and special networking events	4:00-5:00 pm
Special Networking Event: Sponsor Presentations	4:00-5:30 pm
Poster sessions	5:30-7:00 pm
Thursday, August 12	
Symposia, lightning talks, and general paper sessions	10:00-11:30 am
Plenary: AOS Early Career Symposium (part 2)	12:00-1:30 pm
Networking	1:30-2:00 pm
Symposia, lightning talks, and general paper sessions	2:00-3:30 pm
Bird Friendly Coffee Hour	4:00-5:00pm
Round tables and special networking events	4:00-5:00 pm
Special Networking Event: Sponsor Presentations	4:00-5:00 pm
Special Roundtable: Building equity with path-building Black Ornithologists	5:30-7:00 pm
Friday, August 13	
Symposia, lightning talks, and general paper sessions	10:00-11:30 am
Plenary: SCO-SOC Early Career Symposium	12:00-1:30 pm

Networking	1:30-2:00 pm
Symposia and general paper sessions	2:00-3:30 pm
Closing remarks, student awards, Invited Speaker: Leroy Little Bear	4:00-5:30 pm
Closing event: Storytelling	6:00-7:30 pm

General Schedule

TIME ZONE (WEST TO EAST) Start of 30-min block						GENERAL SCHEDULE				
AKDT	PDT	MDT	CDT	EDT	ADT	Aug 9	Aug 10	Aug 11	Aug 12	Aug 13
						MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
6:00	7:00	8:00	9:00	10:00	11:00	AOS & SCO-SOC 101	Paper Session	Paper Session	Paper Session	Paper Session
6:30	7:30	8:30	9:30	10:30	11:30	INVITED PRESENTATION: BIRDABILITY				
7:00	8:00	9:00	10:00	11:00	12:00	BREAK	BREAK	BREAK	BREAK	BREAK
7:30	8:30	9:30	10:30	11:30	12:30	WELCOME KEYNOTE - DREW LANHAM	AOS PLENARY - SCOTT EDWARDS	SCO-SOC PLENARY - ALICE BOYLE	PLENARY - AOS ECR AWARDS	PLENARY - SCO-SOC ECR AWARDS
8:00	9:00	10:00	11:00	12:00	13:00					
8:30	9:30	10:30	11:30	12:30	13:30	Networking	Networking	Networking	Networking	Networking
9:00	10:00	11:00	12:00	13:00	14:00					
9:30	10:30	11:30	12:30	13:30	14:30	Paper Session	Paper Session	Paper Session	Paper Session	Paper Session
10:00	11:00	12:00	13:00	14:00	15:00					
10:30	11:30	12:30	13:30	14:30	15:30	BREAK Round Tables/Special Networking Events	BREAK Round Tables/Special Networking Events	BREAK Round Tables/Special Networking Events	BREAK Round Tables/Special Networking Events	Closing Events INVITED SPEAKER - LEROY LITTLE BEAR
11:00	12:00	13:00	14:00	15:00	16:00					
11:30	12:30	13:30	14:30	15:30	16:30	BREAK	BREAK	BREAK	BREAK	BREAK
12:00	13:00	14:00	15:00	16:00	17:00					
12:30	13:30	14:30	15:30	16:30	17:30	Music with NAOBA; Quiz Bowl	Poster Session	Poster Session	Special Roundtable: Equity thru Mentorship	Closing Events - Storytelling
13:00	14:00	15:00	16:00	17:00	18:00					
13:30	14:30	15:30	16:30	17:30	18:30	Rainbow Lorikeets LGBTQIA+ & Allies Social				
14:00	15:00	16:00	17:00	18:00	19:00					
14:30	15:30	16:30	17:30	18:30	19:30					
15:00	16:00	17:00	18:00	19:00	20:00					
15:30	16:30	17:30	18:30	19:30	20:30					
16:00	17:00	18:00	19:00	20:00	21:00					
https://www.timeanddate.com/time/map/										

Detailed Agenda

DETAILED AGENDA (All times in U.S. Eastern (GMT -4))	
Monday, August 9	

10:00-10:30 am	AOS & SCO-SOC 101: Orientation and ice-breaker session for first-time attendees. Learn effective networking strategies and learn how to take full advantage of what's available at this conference! <i>Allison Shultz, Sahas Barve</i>
10:30-11:30 am	Invited Speaker: Freya McGregor <i>Birdability: Because birding is for everybody and every body!</i>
11:30-12:00 pm	Break
12:00-12:10 pm	Opening Session: Welcome Message - Sushma Reddy & Leticia Soares, Co-Chairs of MCC
12:10-1:10 pm	Keynote Speaker: J. Drew Lanham <i>Coloring the Conservation Conversation: What Ornithology Teaches Us About Identity through History, Science, and Literature</i>
1:10-1:30 pm	AOS Awards and Elections - Mike Webster, AOS President
1:30-2:00 pm	Networking: Chirp & Chirp! Networking sessions
2:00-3:30 pm	Symposia and general paper sessions
3:30-4:00 pm	Break
4:00-5:00 pm	Networking: Chat Roulette
4:00-5:00 pm	Networking: Early Professional Networking
4:00-5:00 pm	Networking: Pre-College Students Networking series
4:00-5:00 pm	Networking: Prospective Grad Students Networking series
5:30-6:00 pm	Opening Reception: TIERRA Y CIELO (Earth & Sky): An audio-visual Ritual Performance by NAOBA
6:00-7:30 pm	Quiz Bowl emceed by Amelia-Juliette Demery & Jennifer Houtz
Tuesday, August 10	
10:00-11:30 am	Symposia and general paper sessions
11:30-12:00 pm	Break
12:00-1:05 pm	AOS Plenary: Scott Edwards <i>Exploring, Discovering, and Cycling through the Diversity of Birds</i>
1:05-1:30 pm	AOS Early Career Research Symposium 2021 James G. Cooper Early Professional Award Winner: Benjamin Van Doren <i>Changing migrations in a changing world</i>
1:30-2:00 pm	Networking: Chirp & Chirp! Networking sessions
2:00-3:30 pm	Symposia and general paper sessions
3:30-4:00 pm	Break
4:00-5:00 pm	Round Table: Birds of the World: Contribute your expertise!
4:00-5:00 pm	Round Table: A mixed flock: LGBTQIA+ narratives within ornithology
4:00-5:00 pm	Round Table: Meet the AOS Editors
4:00-5:00 pm	Networking: BirdsCaribbean Meet & Greet
4:00-5:00 pm	Networking: Pre-College Students Networking series
4:00-5:00 pm	Networking: Prospective Grad Students Networking series
4:00-5:00 pm	Sponsor Presentations: Lotek Wireless Inc., Wildlife Acoustics & Waterford Press
5:30-7:00 pm	Poster Sessions

7:00-8:30 pm	Mixer: Rainbow Lorikeets LGBTQIA+ & Allies Social [Pre-registered only]
Wednesday, August 11	
10:00-11:30 am	Symposia and general paper sessions
11:30-12:00 pm	Break
12:00-1:10 pm	SCO-SOC Plenary: <i>Alice Boyle</i> <i>Why didn't I think of this before? Rain, movement, and changing perspectives on tropical grassland birds</i>
1:10-1:25 pm	SCO-SOC Awards
1:25-1:30 pm	In Memoriam
1:30-2:00 pm	Networking: Chirp & Chirp! Networking sessions
2:00-3:30 pm	Symposia and general paper sessions
3:30-4:00 pm	Break
4:00-5:00 pm	Round Table: Identifying and overcoming the challenges that hinder avian microbiome research
4:00-5:00 pm	Round Table: Professional Ethics Town Hall
4:00-5:00 pm	Networking: North American Banding Council Meet and Greet
4:00-5:00 pm	Networking: Pre-College Students Networking series
4:00-5:00 pm	Networking: Prospective Grad Students Networking series
4:00-5:00 pm	Networking: Postdocs in Ornithology Networking Panel
4:00-5:30 pm	Sponsor Presentations: National Audubon Society, Avinet, & Titley Scientific
5:30-7:00 pm	Poster Sessions
Thursday, August 12	
10:00-11:30 am	Symposia and general paper sessions
11:30-12:00 pm	Break
12:00-1:30 pm	AOS Early Career Research Symposium 2021 Ned K. Johnson Early Investigator Award Winner: <i>Sahas Barve</i> <i>Bird-nerd without borders: Curiosity and other motivations for integrative avian research</i>
	2021 James G. Cooper Early Professional Award Winner: <i>Ana Gonzalez</i> <i>From the Colombian Andes to North America: Research and conservation of Neotropical migratory birds</i>
	2021 Ned K. Johnson Early Investigator Award: <i>Luis Sandoval</i> <i>City effect on bird communication and ecology</i>
	Committee Thank Yous
1:30-2:00 pm	Networking: Chirp & Chirp! Networking sessions
2:00-3:30 pm	Symposia and general paper sessions
3:30-4:00 pm	Break
4:00-5:00 pm	Round Table: Drone applications for ornithology
4:00-5:00 pm	Round Table: What "Open Science" means for publishing now and in the future
4:00-5:00pm	Networking: Bird Friendly Coffee Hour
4:00-5:00 pm	Networking: Pre-College Students Networking series

4:00-5:00 pm	Networking: Prospective Grad Students Networking series
4:00-5:00 pm	Sponsor Presentations: FLAP Canada, ZEISS
5:30-7:00 pm	Round Table: Dr. Janet Buckner, Baiyinah Abdullah, and Courtney Akinosho; Moderated by Monique Pipkin <i>Building equity and accessibility to birding through mentorship: A special roundtable with path-building Black Ornithologists</i>
Friday, August 13	
10:00-11:30 am	Symposia and general paper sessions
11:30-12:00 pm	Break
12:00-1:30 pm	SCO-SOC Early Career Research Symposium 2020 ECRA Recipient for Outstanding Contribution and Leadership Potential to Canadian Ornithology: Barbara Frei <i>Conservation of migratory birds in a rapidly changing world</i>
	2021 ECRA Recipient for Outstanding Contribution and Leadership Potential to Canadian Ornithology: Ryan Germain The role of life-history traits in mediating demographic sensitivity to past periods of climate change
	Special ERCA for exceptional contributions to South American, Central American, Mexican, or Caribbean ornithology: Mariana Villegas <i>Ecological differentiation in some Passeriform birds of South America</i>
1:30-2:00 pm	Networking: Chirp & Chirp! Networking sessions
2:00-3:30 pm	Symposia and general paper sessions
3:30-4:00 pm	Break
4:00-4:30 pm	Closing remarks and student presentation awards
4:30-5:15 pm	Invited Speaker: Leroy Little Bear <i>The ecological role of birds and what it says about <u>Homo sapiens</u></i>
5:15-5:30 pm	Closing remarks and thank yous
6:00-7:30 pm	Closing Celebration: Storytelling Event <i>Tales from a mixed-species flock: Stories across ornithology</i> Yamina Nater-Otero, Kristen Ruegg, Dai Shizuka, Archita Sharma, and Aghah Valery Binda



Merchandise

Please choose something fun—a commemorative mug for your desk, a protective hat to wear during field work, some snappy apparel, a convenient tote bag, or even a stylish face mask! [Our conference store will be open](#) for the duration of the meeting! Proceeds from 2021 meeting merchandise sales through Bonfire will be used to assist the societies' joint efforts to support students, early professionals, and special country attendees at the virtual meeting.





Opening Reception: Music with NAOBA

TIERRA Y CIELO (Earth & Sky): An audio-visual Ritual Performance by NAOBA
Monday, 9 August 5:30 p.m.

The mesoamerican artist [NAOBA](#) brings us the joy to connect with all of our senses to the environments of our Planet Earth. She will take us on a musical and visual journey to the jungles and the high sierras, where birds caress the sky, and into the deep oceans where cetaceans thrive with their ancestral songs that connect with the ancient cosmos. This hybrid electro-acoustic concert made especially for the opening ceremony of the AOS & SCO 2021 meeting, Birds of Many Feathers Flock Together, tells the tale of the diversity and bounty of the earth's landscapes with all of its creatures, creating a bridge to and dialogue with the natural world, to remind us, reconnect us, and rekindle our relationship to Life. Join us for a special performance from NAOBA music, featuring ambient sights and sounds of nature alongside beautiful bird calls from across Latin America.



Tamara Montenegro – NAOBA Music



[Tamara Montenegro](#) is the pivoting pioneering feminine force behind the electronic music and sound art culture in Nicaragua and the Central American region.

With a Bachelor of Science in Biology & Physics from Concordia University, Montreal, and a Master's degree in Psychoacoustic research from Universidad de Barcelona, Tamara's approach to music creation and teaching derives from a holistic world view of creative development.

Visionary, music artist, DJ, producer, experience curator, soundtrack designer, ecologist, educator and documenter of ancient native wisdom (language and sound), Tamara has paved a 15-year path with a body of work spanning an extensive palate of sound and musical explorations of distinct nature.

With a degree in biology and a Masters in sound art Tamara has delved into psychoacoustics research – the study of how sound stimulates human physiologic response. This is the basis for her developments of audio technology to create soundscapes for yoga practice, meditations, holotropic breathwork sessions and other mind-body practices.



Quiz Bowl

Huzzah, it's time for the Quiz Bowl! After a year's hiatus, the [Student Affairs Committee](#) (SAC) is bringing back the annual competition of avian and avian-adjacent trivia for students and bird-lovers one and all! The Quiz Bowl, organized by the SAC, is one of the most popular annual events at AOS, NAOC, and now the AOS-SCO meetings.

Routinely attracting hundreds of attendees, the Quiz Bowl pits groups of three against each other as they navigate a minefield of scientific and pop culture trivia questions, all geared toward the ornithologically-inclined. Meeting attendees at all career stages can compete for fun prizes in the initial "pub-style" round, and the top three student groups move forward to compete in the final round for even greater glory. Prizes are donated by conference sponsors and partners and may include birding gear, field guides, and awesome trinkets. Spectators are more than welcome in this virtual setting that will feature not one but TWO bird-tastic emcees!

See below for important information before registering for the event:

- Public viewing of the AOS & SCO-SOC 2021 Quiz Bowl will be facilitated on a YouTube Live streaming link.
- Official teams will be composed of 3 members max. Only teams composed of members who are all students AND registered for AOS & SCO-SOC 2021 will be eligible to qualify for the final round for prizes.
- [Quiz Bowl registration](#) will feature an option to be randomly assigned to a team, as well as an option to register yourself and a team you have already planned to be a part of.
 - If the latter, only one person needs to register. That person will register themselves and their entire team for the event (don't forget to think of a team name!)

We look forward to seeing you compete!



Keynote Speaker, J. Drew Lanham

Coloring the Conservation Conversation: What Ornithology Teaches Us About Identity through History, Science, and Literature

Monday, 9 August, 12:00 p.m. (EDT)



Dr. J. Drew Lanham

Alumni Distinguished Professor, Provost's Professor and Master Teacher of Wildlife Ecology, Clemson University

J. Drew Lanham, Ph.D., is a native of Edgefield, South Carolina, and a product of family farm, abundant wildness and bittersweet legacy of land interdependence by chain and choice. He is an Alumni Distinguished Professor, Provost's Professor and Master Teacher of Wildlife Ecology at Clemson University. Dr. Lanham is a cultural and conservation ornithologist whose work addresses the confluence of race, place and nature. He is the Poet Laureate of his home county and the author of *Sparrow Envy – Poems* (Holocene 2016, Hub City 2018), *Sparrow Envy – A Field Guide to Birds and Lesser Beasts* (Hub City 2021), and *The Home Place – Memoirs of a Colored Man's Love Affair with Nature* (Milkweed 2016/Tantor Audio 2018). The memoir is a winner of the Reed Environmental Writing Award (Southern Environmental Law Center), the Southern Book Prize and a 2017 finalist for the Burroughs Medal. It was recognized as a memoir and scholarly book of the decade (2010–20) by Literary Hub & *The Chronicle of Higher Education*, respectively, and has been a common read for universities, colleges, and other organizations. Drew's creative work and opinion appears in *Orion Magazine*, *Vanity Fair*, *Oxford American*, *High Country News*, *Bitter Southerner*, *Emergence*, *Cutthroat*, *Flycatcher*, *Terrain*, *Places Journal*, *Literary Hub*, *Newsweek*, *Slate*, on NPR, Story Corps, Threshold Podcast, *Audubon*, *Sierra Magazine*, *The New York Times*, This is Love with Krista Tippet and On Being Podcasts, among others. He is a contributor to myriad anthologies including *The Colors of Nature*, *Bartram's Living Legacy*, *Carolina Writers at Home*, *Gather at the River – Twenty-Five Authors on Fishing*, and several others. His remarks inform art of endangered species and little-known spaces to illuminate the importance of ethnic prism in seeing nature. Drew has taught writing at several workshops including Imagination in the Ruins (Wofford College), Breadloaf (Environmental), Orion (online), Moravian College, Northwood Writer's Conference (2021) and Chico (pandemic rescheduled to 2021).

Dr. Lanham is known widely as a conservation and environmental advocate and has served on national boards including the National Audubon Society, the Aldo Leopold Foundation, Birdnote, and the American Birding Association. He was past board chair of the Audubon South Carolina Advisory Board and State Affiliate Representative for the South Carolina Wildlife Federation, where

he conceived, designed and implemented “Palmetto Pro Birders,” one of the first state-driven, non-governmental conservation-run community science/bird conservation efforts in the U.S. For his service over the past thirty years, Drew has been awarded the Dan W. Lufkin Conservation Award (National Audubon Society), the Rosa Parks and Grace Lee Boggs Outstanding Service Award (North American Association for Environmental Education), and the E.O. Wilson Award for Outstanding Science in Biodiversity Conservation (Center for Biological Diversity). He’s a past winner of Regional Emmys for his public radio birding broadcasts and most recently named as the Roland P. Alston Awardee for outstanding outreach communication at Clemson University. The South Carolina Land Conservancy Upstate Forever, recognized him as its Tommy Wyche Land Conservation Champion, citing his “...decades of teaching, research, and writing that have made the field of conservation more accessible and inclusive.” Drew is currently a Contributing Editor for *Orion Magazine*, a wide-ranging public speaker, a lifelong bird watcher/adorer and a hunter/conservationist, who writes on the eco-pyscho-social edges where the richness of wildness and identity converge. His forthcoming book (2022–23) from Farrar, Straus and Giroux, *Range Maps – Birds, Blackness and Loving Nature Between the Two*, is the work that he hopes will breathe being into his desire to make birds “who’s” as much as “what’s,” and his writing to become the definitive “feel guide” for blending culture and conservation. Drew resides in Seneca, South Carolina, a soaring broad-winged hawk’s downhill glide from the foot of the Southern Appalachian escarpment the Cherokee once called the “Blue Wall.”

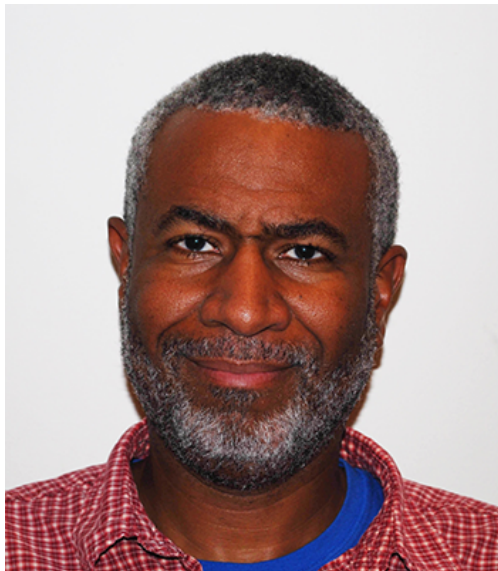


Plenary Speakers

AOS Plenary, Scott Edwards

Exploring, Discovering, and Cycling through the Diversity of Birds

Tuesday, 10 August, 12:00 p.m. (EDT)



Dr. Scott Edwards

Alexander Agassiz Professor of Zoology and Curator of Ornithology in the Museum of Comparative Zoology at Harvard University

Dr. Scott Edwards is the Alexander Agassiz Professor of Zoology and Curator of Ornithology in the Museum of Comparative Zoology at Harvard University. Scott is an evolutionary biologist, with diverse interests in molecular evolution, phylogenetics, comparative genomics, and population genetics. His research uses birds as model systems, focusing on their evolutionary history and genome evolution, and fieldwork around the globe. He did postdoctoral work at the University of Florida to study interactions of birds and infectious diseases. His current work focuses on using phylogenetic trees and statistical models to link genome variation, especially noncoding DNA, and phenotypic variation. Scott has served as President of the Society for the Study of Evolution, the Society of Systematic Biologists, and the American Genetic Association, as well as on the Advisory Boards of the National Museum of Natural History (Smithsonian) and the Cornell Lab of Ornithology. From 2013–2015 Scott served as Division Director of the Division of Biological Infrastructure at the U.S. National Science Foundation, where he facilitated funding in areas such as undergraduate, graduate, and postdoctoral research experiences, supporting biological collections and major infrastructure and bioinformatics. He is an Elected Fellow of the American Association of the Advancement of Science (2009), the American Academy of Arts & Sciences (2009), the U.S. National Academy of Sciences (2015), and the American Philosophical Society (2020). He has a long-standing interest in increasing the diversity of undergraduates, graduate students and faculty in evolutionary biology and biodiversity science.

Why didn't I think of this before? Rain, movement, and changing perspectives on tropical and grassland birds

Wednesday, 11 August, 12:00 p.m. (EDT)



Dr. Alice Boyle

*Associate Professor at the Division of Biology,
Kansas State University*

Dr. Alice Boyle is an ornithologist and former professional violist who grew up in Winnipeg, Manitoba, surrounded by the Canadian grassland prairies. She earned her Bachelors of Music at the University of British Columbia. Fresh out of undergrad, she moved to Costa Rica to play in the Costa Rican National Symphony, when she started birding during her time off. What once started as an occasional hobby, sparked a passion for bird behavior and natural history, which eventually led to a Ph.D. in Ecology and Evolutionary Biology at the University of Arizona. She held postdoctoral positions at University of British Columbia and at Western University, where she was a postdoctoral fellow of Canada's Natural Sciences and Engineering Research Council. She followed a very non-traditional career path for a scientist and is thrilled the path has led here. Dr. Boyle, now surrounded by the grassland prairies of the Midwest region of the U.S., currently leads a prolific research group at Kansas State University, where she is an Associate Professor at the Division of Biology. She describes her lab interests as trying to understand 'why animals do the things that they do in nature, and why some of them are in trouble.' Her group investigates the consequences of environmental factors for bird populations. Some themes of her research include examining how rain affects avian ecology and life history evolution, for example, dispersal and migration movements, population dynamics, sexual selection, and brood parasitism. Currently, she leads research work in two very different systems: birds living in wet montane forests of Costa Rica; and grassland-dependent bird species living in the tallgrass prairies of the central U.S. Dr. Boyle is an Elective Member of the American Ornithologists' Union, and elected Fellow and Council member of the American Ornithological Society, which awarded her the Marion Jenkinson Service Award in 2019 and the Katma Award in 2021.



Invited Speakers

Birdability: Because birding is for everybody and every body!

Monday, 9 August, 10:30 a.m. (EDT) (During opening events.)



Freya McGregor

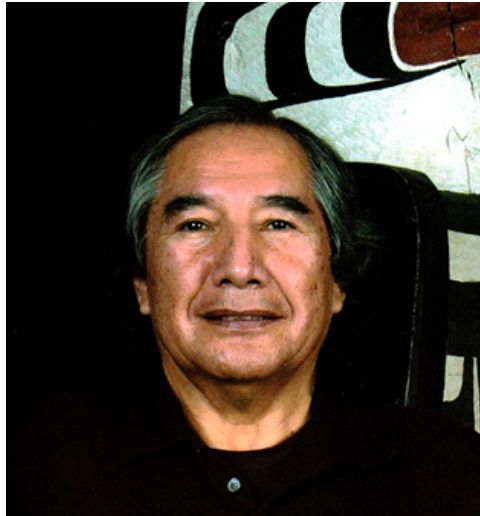
Birdability Coordinator and Occupational Therapist

Birding is an activity that can bring so much joy and empowerment to everybody, but not everybody is able to go birding easily. Birdability is a brand new non-profit, based in the U.S. but with a global reach. Through education, outreach, and advocacy, Birdability works to ensure the birding community and the outdoors are welcoming, inclusive, safe, and accessible for everybody. We focus on people with mobility challenges, blindness or low vision, chronic illness, intellectual or developmental disabilities, mental illness, and those who are neurodivergent, deaf or hard of hearing, or who have other health concerns. In addition to current birders, we strive to introduce birding to people with disabilities and other health concerns who are not yet birders so they too can experience the joys of birding. Learn about why this should matter to you (even if you don't have an accessibility challenge), ways to be a more welcoming and inclusive birder, the Birdability Map (and how to submit a Birdability Site Review), and our resources for birders (and potential future birders) with accessibility challenges... because birding is for everybody and every body!

Learn more and find resources at birdability.org or follow @birdability on Facebook, Instagram and Twitter.

The ecological role of birds and what it says about *Homo sapiens*

Friday, 13 August, 4:30 p.m. (EDT) (During closing events.)



Dr. Leroy Little Bear

*Professor Emeritus, University of Lethbridge;
Founding Director of the Native American Program,
Harvard University; Member of the Small Robes Band
of the Blood Indian Tribe of the Blackfoot
Confederacy*

Leroy Little Bear, JD, DAS (Hon), LLD (Hon), is a member of the Small Robes Band of the Blood Indian Tribe of the Blackfoot Confederacy. He was born and raised on the Blood Indian Reserve, attended and graduated from St. Mary's School on the Blood Indian Reserve. He attended and graduated from the University of Lethbridge, Lethbridge, Alberta, with a BA degree in 1971, then attended and graduated from the College of Law, University of Utah, Salt Lake City, Utah, with a Juris Doctor degree in 1975. From 1975 to the end of 1996, Mr. Little Bear was a professor in the Native American Studies Department at the University of Lethbridge. In January of 1997, Mr. Little Bear retired from the University of Lethbridge. From January 1998 to June 1999, Mr. Little Bear was the Director of the Harvard University Native American Program.

Mr. Little Bear has served in a legal and consultant capacity to many Indian Tribes and organizations, including the Blood Tribe, Indian Association of Alberta, and the Assembly of First Nations of Canada. He has served on many different committees, commissions, and boards, including the Task Force on the Criminal Justice System and Its Impact on the Indian and Metis Peoples of Alberta in 1990–1991.

Mr. Little Bear has authored many articles, including "A Concept of Native Title," which has been cited in a Canadian Supreme Court decision. He has co-authored books, including *Pathways to Self-Determination*, *Quest For Justice*, and *Governments in Conflict* with Dr. Menno Boldt and Dr. Anthony Long.

In 2003, Mr. Little Bear was the recipient of a Canadian National Aboriginal Achievement Award in Education. In June of 2004, Mr. Little Bear was the recipient of an honorary Doctor of Arts and Science degree from the University of Lethbridge and, in 2016, an honorary Doctor of Laws degree from the University of Northern British Columbia. Mr. Little Bear received the Alberta Order of Excellence in 2016, and most recently was made an Officer of the Order of Canada in 2018.

Mr. Little Bear and his wife, Amethyst First Rider, were major movers of the historic Buffalo Treaty signed by First Nations on both sides of the U.S.-Canada border. Both dedicate a large amount of their time to buffalo restoration.



AOS Early Career Symposium

Tuesday, 10 August, 1:05 pm (EDT)



Changing migrations in a changing world

Dr. Benjamin Van Doren, AOS

Postdoctoral Fellow at the Cornell Laboratory of Ornithology

Winner of the AOS 2021 James G. Cooper Early Professional Award

Dr. Van Doren studies global bird migration across scales, from individuals to continents, and his work spans ecology, evolution, behavior and conservation. He received his Ph.D. from the University of Oxford, where he studied drivers of change and flexibility in migratory behavior. As a Postdoctoral Associate at the Cornell Lab of Ornithology, he focuses on leveraging complementary data sources to understand the dynamics of migration systems, including predicting large-scale migratory movements and mitigating negative impacts of human activity on migratory birds. His contributions as a science communicator to [Birdcast.info](https://birdcast.info) have garnered more than two million views, his publications include three papers in *The Auk* (now *Ornithology*) and his service already includes more 32 paper reviews for various scientific journals, all extraordinary achievements for Dr. Van Doren's career stage. His publications have been characterized by exceptional quality and have already contributed to multiple areas of avian ecology and evolution, including migratory biology (Van Doren et al. 2017, *J. Avian Biol.*), breeding biology (Van Doren et al. 2016, *Behavioral Ecology*; Van Doren et al. 2019, *BBOC*), conservation biology (Van Doren et al. 2017, *PNAS*), aero-ecology (Van Doren et al. 2015, *Auk*), genomics (Sendell-Price et al. 2020, *G3*), and systematics (Van Doren et al. 2018, *Wilson J. Ornith.*).



Bird-nerd without borders: Curiosity and other motivations for integrative avian research

Dr. Sahas Barve, AOS

Postdoctoral Fellow at the Smithsonian Institution's National Museum of Natural History

Winner of the AOS 2021 Ned K. Johnson Early Investigator Award

Dr. Barve, a Postdoctoral Fellow at the Smithsonian Institution's National Museum of Natural History, is known for his scholarly work as well as his exceptional record of service to AOS. Dr. Barve's research, which is focused on numerous aspects of behavioral ecology and eco-physiology of birds with an emphasis on Himalayan birds, has had demonstrable and wide-ranging impacts in both India and North America. Dr. Barve is an accomplished teacher and mentor who has mentored 19 undergraduate and 7 graduate students representing five countries. Dr. Barve received his Ph.D. from Cornell University in 2017, having immigrated from India to the U.S. for his doctoral training. His notable publications include one that demonstrated that elevational migration was associated with a distinct hematological profile versus high elevation resident species in the Himalayas (Barve et al. 2016, *Proc. Roy. Soc. B*), adjustments to blood-oxygen carrying capacity, a study of the mechanisms causing elevational replacement in Himalayan titmice (Barve and Dhondt 2017, *J. Avian Biology*), three studies on social and nesting behavior in Acorn Woodpeckers (Barve et al. 2019, *American Naturalist*; Barve et al. 2020, *Ecology*; Barve et al. 2020, *Current Biology*), and a comparative study of thermo-insulative properties of feathers in Himalayan birds (Barve et al. 2021, *Ecography*). In 2020, Dr. Barve published guidelines and recommendations for field studies by ornithologists in India in *Indian Birds*.



From the Colombian Andes to North America: Research and conservation of Neotropical migratory birds

Dr. Ana Gonzalez, AOS

*Postdoctoral Research Fellow at Environment and
Climate Change Canada*

***Winner of the AOS 2021 James G. Cooper Early
Professional Award***

Dr. Gonzalez, a Postdoctoral Research Fellow at Environment and Climate Change Canada, is being recognized for her outstanding publication record and her many accomplishments in conservation biology, including establishing important conservation agreements to maintain critical habitat for birds, and the widespread training of biologists in six countries on bird banding and tracking. She received her Ph.D. from University of Saskatchewan in October, 2018. Among her 12 publications are several notable contributions, including a paper linking migratory pace and departure time in Swainson's Thrushes (Gonzalez et al. 2020, *J. Animal Ecol.*), a paper examining shade-coffee versus native forest as overwintering habitat for Canada Warblers (Gonzalez et al. 2020, *Condor*), and a paper showing how the topography of the Andes influences the non-breeding distribution of Canada Warblers (Gonzalez et al. 2018, *Diversity and Distributions*). Dr. Gonzalez' research is marked by a holistic approach to the biology of migratory birds. She considers the full annual cycle of migratory species and uses a variety of methods to advance our understanding of factors influencing populations. She then applies a similar holistic approach to conservation efforts, which include identifying priority areas for conservation, training young biologists, working with rural farmers to conserve habitat, and promoting bird friendly coffee. Dr. Gonzalez is originally from Colombia and is the first Hispanic female recipient of the Cooper Award.



City effect on bird communication and ecology

Dr. Luis Sandoval, AOS

Assistant Professor and Curator of the Ornithology Collection at Universidad de Costa Rica Escuela de Biología and Museo Zoología

Winner of the AOS 2021 Ned K. Johnson Early Investigator Award

Dr. Sandoval, Assistant Professor and Curator of the Ornithology Collection at Universidad de Costa Rica Escuela de Biología and Museo Zoología, is widely respected for his work promoting diversity in the field of ornithology, and is recognized for a record of prolific scholarship, mentorship, and teaching for his career stage. Having published more than 100 peer-reviewed papers within six years of his Ph.D. from the University of Windsor (Canada) in 2014, Dr. Sandoval's scholarly work is largely about natural history, vocal behavior, and the avifauna of Costa Rica. Dr. Sandoval has supervised nine graduate students already in his brief faculty career, and he has published more than 40 publications with these students. He is also an active member of ornithological societies, currently president of the Asociación Ornitológica de Costa Rica. He was chair of the organizing committee for the 2019 Neotropical Ornithological Society meeting in San Jose, Costa Rica. Dr. Sandoval is the coordinator of important bird areas in Costa Rica, as well as a co-coordinator of species assessments in Central Costa Rica. He has reviewed manuscripts for 36 scientific journals. He has earned a reputation for promoting diversity in the field of ornithology, in part through his commitment to activities such as leading bioacoustic and shorebird monitoring workshops throughout Central and South America, and organizing a roundtable about interdisciplinary studies of the House Wren at the 2020 NAOC.



SCO-SOC Early Career Symposium

Friday, 13 August, 12:00 pm (EDT)



Conservation of migratory birds in a rapidly changing world

Dr. Barbara Frei, SCO-SOC

Quantitative Wildlife Biologist, Environment and Climate Change Canada

SCO-SOC 2020 ECRA Recipient for Outstanding Contribution and Leadership Potential to Canadian Ornithology

Barbara Frei joined ECCC's Canadian Wildlife Service in 2019 as a Quantitative Wildlife Biologist. She has demonstrated leadership in Canadian ornithology in a variety of contributions, including ornithological research, student mentorship, overseeing a research station, and being involved in species-at-risk policy, including authoring recovery strategies and COSEWIC status updates. Dr. Frei's research has explored species-specific behaviour, habitat associations, population ecology, as well as broader themes including patterns of biodiversity, ecosystem services, landscape ecology, climate change and migration, and 'bright spots' in agricultural landscapes. She co-founded the McGill Bird Observatory (MBO) in 2004, serving as Director since 2012. She spearheaded MBO's research program in 2014, co-supervising seven student theses and establishing a local Motus network. Dr. Frei is passionate about scientific communication, having trained and taught hundreds of volunteers about birds and migration, given numerous public presentations on species-at-risk, a frequent guest on local radio, and reached out to teach children about birds via zoom classroom presentations and a guest appearance on children's science TV show. Dr. Frei's training includes a Ph.D. from McGill University under James Fyles and Joe Nocera, an M.Sc. from McGill University under David Bird and Rodger Titman and B.Sc. from Carleton University. She conducted postdoctoral research at the University of Ottawa with Jeremy Kerr and at McGill University with Elena Bennett. She is currently on the board of directors for the Migration Research Foundation and served as a board member for Bird Protection Quebec and a councillor for the SCO-SOC.



The role of life-history traits in mediating demographic sensitivity to past periods of climate change

Dr. Ryan Germain, SCO-SOC

Postdoctoral researcher in the Center for Macroecology, Evolution and Climate at the University of Copenhagen

SCO-SOC 2021 ECRA Recipient for Outstanding Contribution and Leadership Potential to Canadian

Ornithology

Ryan Germain is a postdoctoral researcher in the Center for Macroecology, Evolution and Climate at the University of Copenhagen, where he uses genomic and paleo-ecological tools to measure demographic responses of bird populations to climate change over the past one million years. Prior to moving to Denmark, he held postdoc positions at the University of Aberdeen (with Jane Reid) and the Cornell Lab of Ornithology (with Michael Webster and Scott Sillett), where he used long-term field studies to quantify the role of extra-pair mating on population relatedness structure and sexual selection. Dr. Germain's broader research interests cover topics ranging from migration ecology, the role of plumage and song development in sexual signaling, the potential global conservation benefits of federal partnerships with Indigenous communities, as well as how researchers can effectively communicate findings with their target audience (including policymakers, natural resource managers, and the general public). His training includes a PhD from the University of British Columbia with Peter Arcese, and both a M.Sc. and B.Sc. from Queen's University with Laurene Ratcliffe and Peter Marra. Dr. Germain has been an active member of the SCO-SOC and the broader North American Ornithological community since his undergrad, and is the recipient of several student research awards from both the SCO-SOC and AOS. He currently serves as an associate editor of Ornithological Applications, and is passionate about finding evidence-based conservation solutions to protect bird populations in Canada and around the world.



Ecological differentiation in some Passeriform birds of South America

Dr. Mariana Villegas, SCO-SOC

Researcher at the restoration project carried on by the Santiago de Chirca Biological Station (Instituto de Ecología, UMSA)

SCO-SOC Special ERCA Recipient for exceptional contributions to South American, Central American, Mexican, or Caribbean ornithology

Mariana Villegas obtained her bachelor's degree in Biology from the Universidad Mayor de San Andrés (UMSA) in La Paz, Bolivia in 2006; her master's in biology from the University of Missouri-St. Louis (USA) in 2011. She did her Ph.D. at the Department of Wildlife Ecology and Conservation, at the University of Florida (U.S.) and she graduated in August 2016. For her Ph.D. dissertation she examined patterns of ecological differentiation at different scales and migration in the Yungas Manakin (*Chiroxiphia boliviana*, Aves, Pipridae) along an altitudinal gradient in montane rainforests in the tropical Andes of Bolivia. From May 2018 until July 2020 she has been a postdoctoral researcher at the Department of Veterinary Pathology at the University of Saskatchewan (Canada) and a casual researcher at Environment and Climate Change Canada (ECCC). For her postdoctoral research she examined variation in diet and stress responses over time in Darwin's finches of Santa Cruz Island, Galápagos, Ecuador. Currently, she is a researcher at the restoration project carried on by the Santiago de Chirca Biological Station (Instituto de Ecología, UMSA) in Yungas forests of La Paz (Bolivia), where she is studying seed dispersal by birds and bats in forest border areas affected by fire. Mariana is interested and most of her research has been focused on examining the influence of the environment on the ecology and evolution of birds in the tropics of South America, especially Bolivia, for which she applied different tools such as stable isotope ecology, ecological niche modeling, bioacoustics, etc.



AOS Senior Professional Awards 2021

William Brewster Memorial Award

The William Brewster Memorial Award is given each year to the author or coauthors of the most meritorious body of work (book, monograph, or series of related papers) on birds of the Western Hemisphere published during the past ten years. In 2021, AOS is presenting two separate William Brewster Memorial Awards; one to **Dr. Marty L. Leonard** and one to **Dr. Kathy Martin**. Dr. Marty Leonard is Professor of Biology at Dalhousie University in Halifax, Nova Scotia, where she has also been an administrative leader as the Dean for the Faculty of Graduate Studies and as an Acting Dean for the Faculty of Science. Dr. Leonard is being recognized as a distinguished scientist who has made major contributions in two areas of ornithology: the behavioral ecology of breeding birds, and the conservation of endangered birds in Atlantic Canada. Dr. Kathy Martin is a professor in the Department of Forest and Conservation Sciences at the University of British Columbia, and Research Scientist Emeritus with Environment and Climate Change Canada. For more than 40 years, Dr. Martin has contributed significantly to two major areas of ornithological research in the Western Hemisphere: ecology and life history of arctic and alpine birds, and the community dynamics of cavity-nesting birds and how they are affected by forestry and natural disturbances. Dr. Martin served as AOS President and has been previously recognized by the Society for excellence in ornithological research as an AOS Elective Member and Fellow.

Elliott Coues Award

The 2021 Elliott Coues Award, recognizing outstanding and innovative contributions to ornithological research, will also be presented to two separate recipients, **Dr. Peter Arcese** and **Dr. Bruce Beehler**. This year, the AOS recognizes the creative and broadly applicative work of Dr. Peter Arcese, Professor and the Forest Renewal Chair in Conservation Biology in the Department of Forest and Conservation Science at the University British Columbia, as worthy of a Coues Award. Dr. Arcese's research program emphasizes comparative and experimental tests of population demographic, genetic, and conservation theory using long-term studies of bird populations of the Pacific Coast of North America, East and West Africa, and the Northern Andes of South America. Dr. Bruce Beehler is a Research Associate of the Bird Division of the Smithsonian Institution's National Museum of Natural History, whose contributions to tropical biological research are extensive, including ground-breaking fieldwork on the ecology, behavior, and systematics of the birds-of-paradise; and ornithological expeditions and conservation initiatives in New Guinea, India, the Philippines, and Sri Lanka. Dr. Beehler is a prolific scientific and popular writer who has contributed greatly to popularizing ornithological science through his books, papers, field guides, monographs, blogs, and other publications, as well as public lectures, op eds, and news broadcast appearances.

Ralph W. Schreiber Conservation Award

The 2021 Ralph W. Schreiber Conservation Award, honoring extraordinary conservation-related scientific contributions by an individual or small team, will be presented this year to two separate awardees: the Bird Ecology Group (BEG) of the Faculty of Biology, University of Havana, Cuba, led by **Dr. Martin Acosta Cruz**, and to **Dr. Francesca J. Cuthbert** of the University of Minnesota. The BEG in Havana has been conducting research, education, and conservation efforts since 1978, and have contributed significantly to the knowledge and conservation of Cuba's avifauna. Dr. Cuthbert has worked on a wide array of waterbird conservation projects but has spent more than 30 years guiding the work to recover the near-extinct Piping Plover population of the Great Lakes region. Dr. Cuthbert's work has led to recovery of the Great Lakes Piping Plover population and has provided a critical link between the Northern Great Plains and Atlantic populations that will help bolster all three populations.

Loye and Alden Miller Research Award

The 2021 Loye and Alden Miller Research Award, given annually for lifetime achievement in ornithological research, will be presented to **Dr. Tony D. Williams**, Professor of Ecological and Evolutionary Physiology in the department of Biological Sciences at Simon Fraser University. Dr. Williams has made major contributions to the study of avian physiology, focusing his research on physiological adaptations for breeding in birds, and ecotoxicology of wildlife species through his work with the Centre for Wildlife Ecology and Environment Canada.



Scientific Program: Symposia and Paper Sessions

Monday afternoon, 9 August 2021, 14:00-15:30 EDT

	1	2	3	4
Session	Contributed papers: Conservation 1 Moderator: Thomas Benson	Contributed papers: Phylogenetics 1 Moderator: Santiago Claramunt	Contributed papers: Physiology Moderator: Garth Casbourn	Contributed papers: Ecology 1 Moderator: Karina Sanchez
14:00 EDT	*Urbanization influences Wood Thrush abundance and nest success: A 25-year before-and-after study in 70 forest fragments Heide KT, Friesen LE, Norris DR et al. PA: Karl Heide	Phylogeography, hybridization, and eye color variation of the Boat-tailed Grackle (<i>Quiscalus major</i>) Corbett EC, Faircloth BC, Brumfield RT PA: Eamon C. Corbett	*Seasonal plasticity in mitochondrial function of Yellow-rumped Warblers (<i>Setophaga coronata</i>) Coulson SZ, Staples JF, Guglielmo CG PA: Soren Coulson	*Resource and rainfall thresholds structure reproductive phenology of tropical montane bird communities Newell FL, Ausprey IJ, Robinson SK PA: Felicity Newell
14:13	Metabarcoding of Eastern Whip-poor-will fecal samples suggests strong reliance on moths: Implications for conservation Benson TJ, Souza-Cole IF, Skinner AA et al. PA: Thomas Benson	Systematics and evolution of the tyrant-flycatcher tribe Contopini (Tyrannidae) Chesser RT, Tello JG, Harvey MG et al. PA: Terry Chesser	A torpor spectrum in hummingbirds: Can metabolism and body temperature be decoupled? Shankar A, Vitousek MN, Powers DR PA: Anusha Shankar	*Natural and anthropogenic effects on Pacific Swallow (<i>Hirundo tahitica</i>) populations Ramirez B, Hund AK, Zellmer A et al. PA: Brenda Ramirez
14:26	Describing the diet of Eastern Whip-poor-wills and estimating the effect of food availability and landscape composition on their abundance during the breeding season Souza-Cole I, Ward MP, Benson TJ et al. PA: Ian Souza-Cole	Origin and evolutionary history of the endemic Galapagos Rail: Museum specimens, genomes, and conservation Chaves JA, Martinez-Torres PJ, Depino EA et al. PA: Jaime Chaves	The role of testosterone in regulating the movement behaviours of juvenile migrant songbirds Casbourn GW, Posliff CD, Henry C et al. PA: Garth Casbourn	*Multi-scale landscape effects on breeding scoter (<i>Melanitta</i> spp.) and scaup (<i>Aythya</i> spp.) occurrence on ponds in the northwestern boreal forest of North America Tanguay MS, Gurney KEB, Reed ET PA: Moriah Tanguay
14:39	Mercury in Neotropical birds: A collaborative approach to overcome current challenges Sayers CJ II, Ruiz-Gutierrez V, Evers DC et al. PA: Christopher Sayers	A molecular phylogeny and biogeographic analysis of Accipitridae: A test of the monophyly of the genus <i>Accipiter</i> Catanach TA, Hejmadi S, Weckstein JD PA: Therese Catanach	A comparative species approach to determine gonadal testosterone asymmetry in male birds Starkey JM, Pradhan DS, Delehanty DJ PA: Jeremy Starkey	*Raptor foraging ecology and ecosystem services in agricultural landscapes Utley OJ, Lindell CA PA: Olivia Utley
14:52	*Metal contaminant quantification of tissues from Red-shouldered Hawks (<i>Buteo lineatus</i>) reveals the blood feather for non-lethal sampling Bouchenot JT, Beazley MJ, Mason CM et al. PA: Jennifer Bouchenot	Questions and discussion	How does digestive physiology mediate the relationship between diet and color in New World warblers? Webb EA, McGraw KJ PA: Emily Webb	*Avian community structure across an urbanizing county: The effects of noise, light, and landscape composition Sanchez KA, Kennedy C, Benedict L PA: Karina Sanchez
15:05	A retrospective analysis of methylmercury in the feathers of Indonesian avifauna Dzielski SA, Shakya SB, Prawiradilaga DM et al. PA: Sarah Dzielski	Questions and discussion	*Migratory physiology of the nomadic, irruptive Pine Siskin in captivity and the field DeSimone JG, Tobalske BW, Fylling MA et al. PA: Joely DeSimone	*DNA metabarcoding reveals predictors of diet quality variation in Tree Swallows (<i>Tachycineta bicolor</i>) Uehling JJ, Taff CC, Houtz JL et al. PA: Jennifer Uehling
15:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

* indicates student presenters eligible for a Student Presentation Award; "PA" indicates Presenting Author

Monday afternoon, 9 August 2021 (continued)

	5	6	7	8
Session	Contributed papers: Migration and stopover 1 Moderator: Barbara Frei	Contributed papers: Models and methods 1 Moderator: Carlos Rodriguez-Saltos	Contributed papers: Song and vocalizations 1 Moderator: Lauryn Benedict	Contributed papers: Evolution and genomics 1 Moderator: Audrey Martin
14:00 EDT	CANCELLED: Decreased migration distances in North American geese linked to climate change	Developing aVOICE: An interactive tool for comparative bioacoustics Rodriguez-Saltos CA , Bilger HT , Eliason CM et al. PA: Carlos Rodriguez-Saltos	Do form and function predict the acoustic transmission properties of male and female bird songs? Benedict L , Hardt B , Dargis L PA: Lauryn Benedict	*Does ecological specificity impact differentiation across a barrier? Insights from an avian pine-oak assemblage Hruska JP , Manthey JD PA: Jack Hruska
14:13	Spatio-temporal changes in fall waterfowl migration in the context of a rapidly changing world Frei B , Gutowsky S , Baldwin F et al. PA: Barbara Frei	Big-data bioacoustics, biogeography, and biases in birds Provost KP , Yang J , Carstens BC PA: Kaiya Provost	A test of the acoustic adaptation hypothesis explaining range expansion in songbirds with large vocal repertoires: Enhancing our understanding of the Great-tailed Grackle (<i>Quiscalus mexicanus</i>) alarm call Bowser S , MacPherson M PA: Samantha Bowser	Evaluating the effectiveness of dispersal barriers in the Negro River Basin for white sand associated passerines Wadleigh R , Ribas CC , Knowles LL PA: Rachel Wadleigh
14:26	Detecting potential nocturnal pre-migratory roost sites in Canada by Canadian weather radars Cyr M-A , Cheskey E , Bencke A et al. PA: Marc-André Cyr	Determining bird colors from digital images for high-throughput analyses of color evolution Tsai WLE , Schwartz ST , Karan EA et al. PA: Whitney Tsai	*Does vegetation structure shape the acoustic features of Lincoln's Sparrow songs in Alberta? Sánchez NV , Hilje B , Bayne EM PA: Natalie V. Sánchez	CANCELLED: Understanding the effects of sampling on inferred population histories in two North American songbirds
14:39	Near-term ecological forecasting for dynamic aeroconservation of migratory birds Horton KG , Van Doren BM , Albers HJ et al. PA: Kyle Horton	Making bird specimen data more consistent, accessible, and informative Bates JM , Cicero C , Peterson AT et al. PA: A. Townsend Peterson	Acoustic, genetic, and morphological adaptations in song: A study of male and female tropical wren song Graham BA , Sandoval LA , Mennill DJ PA: Brendan Graham	Genomic species delimitation of the Scrub-Jays DeRaad DA , Peterson AT , Moyle RG PA: Devon DeRaad
14:52	Movement patterns of the Orinoco Goose (<i>Oressochen jubatus</i>) on the Rio Branco, northern Amazonia Costa BMS , Devenport L , Simões PI et al. PA: Bruna Costa	Systematic map effort of using small Unmanned Aircraft Systems (sUAS) to monitor birds Elmore JA , Evans KO , Samiappan S et al. PA: Jared Elmore	*Vocal coordination between male and female Carolina Wrens (<i>Thryothorus ludovicianus</i>) Pare RW , Price JJ PA: Rustin Pare	Population genomics and hybrid detections between King and Clapper Rail populations in the eastern United States Elizondo EC , Clark JD , McRae SB et al. PA: Elisa Elizondo
15:05	An evaluation of the importance of Delaware Bay near-shore habitats to migratory songbirds Pickett A , Heckscher CM PA: Aya Pickett	Questions and discussion	Drab males, sweet talkers: Larger song repertoires in males with less conspicuous plumage patterns Sandoval L , Ocampo D PA: Luis Sandoval	Comparative genomic analysis of population history and inbreeding in the Neotropical falcons <i>Falco deiroleucus</i> and <i>Falco rufigularis</i> Martin AM , Berry RB , Byerly PA et al. PA: Audrey Martin
15:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Tuesday morning, 10 August 2021, 10:00-11:30 EDT

	1	2	3	4	5
Session	Symposium: A bird's-eye view of the microbiome – 1	Symposium: What is next in Amazonian biogeography research? – 1	Symposium: Addressing aerial insectivore declines in the Western Hemisphere – 1	Contributed papers: Evolution 1 Moderator: Paul Dougherty	Contributed papers: Life history Moderator: David Vander Pluym
10:00 EDT	Introduction to avian microbiome research Videvall E PA: Elin Videvall	Amazonian biogeography from a historical perspective Aleixo, A PA: Alexandre Aleixo	*Full annual cycle insights on Common Nighthawk population trend Knight EC, Harrison A-L, Scarpignato A et al. PA: Elly Knight	*Do the major histocompatibility complex and the microbiome explain variation in fitness correlates in Dark-eyed Juncos (<i>Junco hyemalis</i>)? Denis JD, Van Laar TA, Slade JWG PA: Joee Denis	Life-history traits of alpine breeding songbirds predict early-life resilience to severe weather events de Zwaan DR, Drake A, Greenwood JL et al. PA: Devin de Zwaan
10:13	What does an avian host want from its intestinal microbiome and how does it encourage that outcome? Klasing KC, DeRogatis AM PA: Kirk Klasing	Idiosyncratic patterns and recent dynamics revealed by demographic modelling in seven Amazonian white-sand ecosystems birds Capurro JMG et al. PA: João Marcos Guimarães Capurro	*Implications of multiple brooding for Barn Swallow (<i>Hirundo rustica</i>) conservation strategies Mann HAR, Imlay TL, Leonard ML PA: Hilary Mann	*Degree of habitat heterogeneity correlates with the evolution of plumage colorfulness (Cardinalidae) Scott BF, Shultz AJ, Burns KJ PA: Benjamin Scott	Migration distance is a fundamental axis of the slow-fast continuum of life history in boreal birds Winger BM, Pegan TM PA: Benjamin Winger
10:26	Patterns of initial microbiome assembly in Neotropical birds Campos-Cerda F, Bohannan BJM PA: Felipe Campos-Cerda	Riverscape dynamics shape microevolutionary processes across Amazonian floodplains Thom G, Shultz E, Aleixo A et al. PA: Gregory Thom	Post-fledging movement and habitat associations of an at-risk aerial insectivore: A Motus Wildlife Tracking System study Mitchell GW, Evans DR, Kusack JW et al. PA: Greg Mitchell	*Color insights in mixed-species flocks from Costa Rican highlands: Revisiting the social mimicry hypothesis Muñoz P, Bitton PP, Sandoval L PA: Pablo Muñoz	Life-history attributes of Arctic-breeding birds may yield uneven responses to environmental variability across different phases of the reproductive cycle Ruthrauff DR, Vijay PP, Hupp JW et al. PA: Daniel Ruthrauff
10:39	Migratory microbiota: Remodeling of the Blackpoll Warbler gut microbiome over fall migration Trevelline BK PA: Brian Trevelline	A chromosomal inversion in the hybrid zone between <i>Rhegmatorhina hoffmannsi</i> and <i>berlepschi</i> Del-Rio G et al. PA: Glaucia Del-Rio	Ecology of near-threatened Sickle-winged Nightjar in grasslands of northern Argentina Cockle KL, Fariña N, Pietrek A et al. PA: Kristina Cockle	*Elevation and niche divergence in Mexican Yellow Grosbeaks (<i>Pheucticus chrysopheplus</i>) Secor MB, McCormack JE PA: Maeve Secor	CANCELLED: Investigating a trade-off between the quality of nest-grown feathers and pace of development in an altricial bird
10:52	Summer-winter variation in the gut microbiota composition of homing pigeons Dietz MW, Matson KD, Versteegh MA et al. PA: Maurine Dietz	Rethinking rivers: Reticulate and micro-endemic histories of diversification in upland forest birds Musher LJ PA: Lukas Musher	Habitat use and stable isotopes inform winter ecology in the Eastern Whip-poor-will Skinner AA, Ward MP, Souza-Cole I et al. PA: Aaron A. Skinner	The role of molt phenology divergence in maintaining reproductive isolation between taxa that hybridize in the Great Plains Dougherty PJ, Carling MD PA: Paul Dougherty	*Long-distance migrants experience slower molecular evolution Pegan TM, Berv JS, Gulson-Castillo ER et al. PA: Teresa Pegan
11:05	Experimental manipulation of dietary carotenoids alters the cloacal microbiome in a colorful bird Hutton P, Giraudeau M, McGraw KJ PA: Pierce Hutton	Genetic diversity and the lack of consistency in taxonomy hinder biogeographic interpretation: A case study with Galbuliformes Ferreira M, Cracraft J, Bates J et al. PA: Mateus Ferreira	Migration and winter ecology of Eastern Whip-poor-will Bakermans MH, Vitz AC PA: Marja Bakermans	Speciation and color evolution in hummingbirds Beltrán DF, Shultz AJ, Parra JL PA: Diego Beltrán	Questions and discussion
11:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Tuesday morning, 10 August 2021 (continued)

	6	7	8
Session	Contributed papers: Conservation 2 Moderator: Jackson Kusack	Contributed papers: Ecology 2 Moderator: Kristin Brunk	Symposium: Great R packages for ornithologists
10:00 EDT	*Searching for gold: Using a novel land cover classification to identify multi-scale drivers of site occupancy by a flagship species for early-successional habitat conservation Lin BH , Bulluck LP PA: Baron Lin	Fire and ice increase nest success in a mountain-endemic South African bird Oswald KN , Diener EF , Diener JP et al. PA: Krista Oswald	How can ornithologists find R packages?, LaZerte SE , PA: Stefanie LaZerte dplyr: A useful toolbox for manipulating data, Aguillon SM , PA: Stephanie Aguillon sf, raster, and tmap: The spatial data trinity, Dyson M , PA: Matt Dyson
10:13	Forest fragmentation in the Amazon reduces the attendance of ant-following birds at army-ant swarms Rodrigues PF , Stouffer PC PA: Patricia Rodrigues	Birds of many microbes flock together: Genetic and environmental drivers of microbial colonization in a wild sparrow Rohrer SD et al. PA: Sage Rohrer	osmdata: Roadless areas and avian diversity, Padgham M , PA: Mark Padgham seewave and tuneR: Sound analysis in ornithology, Tseng Y-C , PA: Yi-Chin Tseng warbler and Raven: Bioacoustics in R, Benítez Saldívar MJ , PA: María Juliana Benítez Saldívar
10:26	*Habitat factors influencing avian community richness on Wetland Reserve Program easements vary across seasons Podoliak J , Hicks D , Webb L PA: Jon Podoliak	Levels of predation at two Leach's Storm Petrel (<i>Hydrobates leucorhous</i>) breeding colonies Hoeg R , Shutler D , Pollet IL PA: Dave Shutler	soundecology: Using acoustic indices for landscape assessment and monitoring, Quinn JE , PA: John Quinn naturecounts: Millions of bird occurrence records at your fingertips, Ethier DM , Lepage D , LaZerte S , PA: Danielle Ethier bbsAssistant: An R package for downloading and handling data and information from the North American Breeding Bird Survey, Burnett JL , PA: Jessica Burnett
10:39	Not singing in the rain: Linking migratory songbird declines with increasing precipitation and brood parasitism vulnerability Rosamond KM , Goded S , Soultan A et al. PA: Kristen Rosamond	Nest boxes vary in effectiveness as a tool to increase presence of American Kestrels (<i>Falco sparverius</i>) in agriculture Hannay MB , Shave ME , Lindell CA et al. PA: Melissa Hannay	motus: Managing motus data in R, Gow EA , MacDonald A , PA: Amie MacDonald track2KBA: An R package for identifying important sites for biodiversity from tracking data, Beal M , Oppel S , Handley J et al., PA: Martin Beal MixSIAR: An R package for avian diet analysis, West EH , PA: Elena West
10:52	*Origins of harvested American Black Duck (<i>Anas rubripes</i>): Testing the flyover hypothesis Kusack JW , Tozer DC , Hobson KA PA: Jackson Kusack	On the importance of Department of Energy lands as habitat for birds Burger J , Gochfeld M PA: Joanna Burger	INLA: A way for ecologists to overcome their worst impulses, Adams EM , PA: Evan Adams pavo: Color analysis in birds, Campillo LC , PA: Luke Campillo moult and moultmcmc: Inference for moult phenology models, Boersch-Supan PH , PA: Philipp Boersch-Supan
11:05	*How common ravens (<i>Corvus corax</i>) exploit anthropogenic food sources through time and space in a semi-transformed, alpine environment Jain V , Sumasgutner P , Cunningham SJ et al. PA: Varalika Jain	Questions and discussion	Putting it all together: Ornithometrics — a task view for ornithology, Beausoleil M-O , PA: Marc-Olivier Beausoleil Questions and discussion Questions and discussion
11:18	Questions and discussion	Questions and discussion	Questions and discussion

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Tuesday afternoon, 10 August 2021, 14:00-15:30 EDT

	1	2	3
Session	Symposium: A bird's-eye view of the microbiome – 2	Symposium: What is next in Amazonian biogeography research? – 2	Symposium: Addressing aerial insectivore declines in the Western Hemisphere – 2
14:00 EDT	Gastrointestinal processes and pathways that mediate interactions between avian hosts and their microbes Karasov WH PA: William Karasov	Bridging shortfalls in Amazonian avian biogeography Lees AC, Aleixo A PA: Alexander Lees	Prairie ponds fuel aerial insectivores: Tales of Tree Swallows in agro-ecosystems Berzins LL, Morrissey CA, Mazer AK et al. PA: Lisha Berzins
14:13	Assessing the phylogenetic signal of the avian microbiome Hird SM PA: Sarah Hird	*Elevational differentiation is associated with rapid trait evolution but not faster speciation of Amazonian birds Luzuriaga-Aveiga VE, Weir J PA: Vanessa Luzuriaga	Interacting effects of poor weather and agricultural landscapes on the fledging success of a declining aerial insectivore Garrett DR, Pelletier F, Garant D et al. PA: Daniel Garrett
14:26	Host phylogeny influences gut microbiome structure in breeding wood-warblers Baiz MD, Miller ET, Wood AW et al. PA: Marcella Baiz	CANCELLED: Disentangling water type from geographic region in determining Amazonian floodplain forest avifaunas	Influence of land use, foraging habitat, and diet effects on swallow neonicotinoid exposure in prairie agroecosystems, Harris ME, Morrissey CA, Hobson KA , PA: Mercy Harris Field characteristics affect swallow foraging in the Little Campbell River Watershed, British Columbia, Jackson MM, Summers KR, Juteau C , PA: Michelle Jackson Light-mediated flexibility in foraging tactics of a crepuscular insectivore, Evens R, Lathouwers M, Liechti F et al. , PA: Ruben Evens
14:39	Honeycreeper hosts: Testing the effects of diet, environment, and evolutionary history on the gut microbiome using a classic example of adaptive radiation in Hawai'i Costantini MS, Videvall E, Campana MG et al. PA: Maria Costantini	*Amazonian suture zones Rego M et al. PA: Marco Rego	Foraging range and habitat use of the Purple Martin (<i>Progne subis</i>), Lalla K, Frei B, Fraser K et al. , PA: Kristen Lalla Effects of agriculture on nestling diet, quality and post-fledging survival: A comparative study between two sympatric species of aerial insectivores in Saskatchewan, Diaz AM, Morrissey C, Hobson KA , PA: Ana Maria Diaz Minor interspecies differences in breeding phenology and productivity between two co-existing aerial insectivores, Boynton CK, Lansdorp OC, Mahony NA et al. , PA: Chloe Boynton
14:52	Gut microbiota as a potential mediator of phenotypic plasticity in birds Houtz JL, Taff CC, MN Vitousek PA: Jennifer Houtz	Biogeography in a changing Amazonia: The past as a key to a challenging future Ribas CC PA: Camila Ribas	Factors influencing apparent annual survival in two sympatric breeding swallow species, Imlay TL, Mann H, Ding A et al. , PA: Tara Imlay Spatial variation in aerial insectivore declines, Shutler D , PA: Dave Shutler Spatial-temporally explicit modelling of changes in aerial insectivore abundance and anthropogenic effects in Canada, Donkersteeg C, Smith AC, Dakin R , PA: Courtney Donkersteeg
15:05	Finch in a pinch: Effects of urbanization on the gut microbiota and parasite resistance of Darwin's finches in the Galapagos Islands Knutie SA, Vaziri GJ PA: Sarah Knutie	Questions and discussion	Anthropogenic light at night influences fledge dates, migration timing, and migratory routes in aerial insectivores, Fraser KC, Davy CM, Bani Assadi S et al. , PA: Kevin Fraser Nesting habitat of a northern population of Chimney Swifts (<i>Chaetura pelagica</i>) in forested landscape using the Motus arrays, Tixier J, Tremblay JA, Devost I et al. , PA: J��r��mie Tixier Chimney Swift use of a large migratory roost in Northern Ontario, Foot�� JR, Pearce J , PA: Jennifer Foot��
15:18	Questions and discussion	Questions and discussion	Questions and discussion

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Tuesday afternoon, 10 August 2021 (continued)

	4	5	6	7	8
Session	Contributed papers: Ecology 3 Moderator: Thibault Tamin	Contributed papers: Conservation 3 Moderator: Sarah Kendrick	Contributed papers: Diseases and parasites Moderator: Jen Owen	Contributed papers: Breeding biology 1 Moderator: Colleen Barber	Contributed papers: Genomics 1 Moderator: Silu Wang
14:00 EDT	Origins and diversification of endemic birds in the Caatinga dry forest Lima H, Bravo GA, Astúa D et al. PA: Hevana Lima	Ecosystem restoration and partnerships: Reintroduction of Brown-headed Nuthatch (<i>Sitta pusilla</i>) to Missouri pine woodlands Kendrick SW, Bonnot TW, Thompson III FR et al. PA: Sarah Kendrick	Influenza prevalence in wild waterfowl inhabiting the continental United States throughout the annual cycle Kent CM, Mullinax JM, Prosser DJ et al. PA: Cody Kent	Birds in the city: The use of artificial materials for nesting decreases nest daily survival Corrales-Moya J, Barrantes G, Chacón-Madrigal E et al. PA: Josué Corrales-Moya	Similar genes underlie the honesty of different ornaments in two populations of a warbler Sly ND, Henschen AE, Freeman-Gallant CR et al. PA: Nicholas Sly
14:13	*Assortative mating for between-patch dispersal status in a wild bird population: Exploring the role of direct and indirect underlying mechanisms Tamin T, Doligez B PA: Thibault Tamin	Translocation methods and post-release monitoring of reintroduced Brown-headed Nuthatch (<i>Sitta pusilla</i>) in Missouri pine woodlands Heath-Acre KM, Kendrick SW, Thompson III FR et al. PA: Kristen Heath-Acre	Epizootic of beak deformities worldwide: A review of avian keratin disorder in wild birds Gerik DE, Van Hemert C, Handel CM et al. PA: Danielle Gerik	Sex-specific contributions to nest building in birds Mainwaring MC, Nagy J, Hauber ME PA: Mark Hauber	Evolutionary history of the Chotoy Spinetail (<i>Schoeniophylax phryganophilus</i> , Aves: Furnariidae): A species with two allopatric populations in seasonally dry forests Silva-Neto PJV, Lucas LAS, Freitas LV et al. PA: Paulo Silva-Neto
14:26	*The influence of pine management on grassland-nesting birds overwintering in central Louisiana, USA Raginski NM, Long AM PA: Nancy Raginski	Bison restoration to mixed-grass prairie is associated with increases in avian diversity and mammal occupancy in riparian areas via effects on vegetation Boyce AJ, Shamon H, McShea WJ PA: Andy Boyce	Does the abundance of ectoparasites in the nest affect nestling condition and fledging success? Apienti TAO, Barber CT PA: Tracy Alice Apienti	Thermal ecology of Trumpeter Swan incubation Miller PC, Delehanty DJ PA: Paige Miller	Introgression and cryptic speciation in a North American passerine Askelson KK, Spellman GM, Irwin DE PA: Kenneth Askelson
14:39	*An integrated resource selection model to predict avian habitat use from grassland vegetation structure Silber KM, Hefley TJ, Boyle WA PA: Katy Silber	CANCELLED: Purple Martin diet is associated with habitat type but not foraging range	*The range expansion of an invasive avian malaria parasite and its potential impacts on two North American songbird species Theodosopoulos AN, Grabenstein KC, Taylor SA PA: Angela Theodosopoulos	Reproductive performance increases with age in European Starlings Obodai NT, Barber CA PA: Colleen Barber	Toward an understanding of the relationship between environment and genetic divergence in White-tailed Ptarmigan Zimmerman SJ, Aldridge CL, Langin KM et al. PA: Shawna Zimmerman
14:52	*Assessing the long-term effects of two expanding gap silvicultural systems on the forest avian assemblage in central Maine Pohlman CK PA: Carl Pohlman	Time trends in Ugandan birds vary by habitat and land protection status Burner RC et al. PA: Ryan Burner	*Malaria parasites of the Saltmarsh Sparrow (<i>Ammodramus caudacutus</i>) and patterns of infection with mercury exposure Neuhaus AP, Martinsen E, Lane O et al. PA: Alyssa Neuhaus	Socio-ecological factors and phenotype relative to neighbors shape the opportunity for polygyny in a migratory songbird Canal C, Schlicht L, Potti J. et al. PA: David Canal	*Evaluating if human land disturbances break species barriers at continent-wide and regional scales Grabenstein KC, Burg TM, Otter KA et al. PA: Kathryn Grabenstein
15:05	Temporal niche partitioning of a plant-hummingbird network in the Atlantic forest of southeastern Brazil Nieto AV, Graham CH, Varassin IG et al. PA: Andrea Nieto	Accelerating declines of North America's shorebirds signal the need for urgent action Smith PA, Smith AC et al. PA: Paul Smith	*Investigating the role of the gut microbiome in susceptibility to avian malaria in Hawaiian honeycreepers Navine AK, Videvall E et al. PA: Amanda Navine	Translocated Lesser Prairie-Chicken lek dynamics and female space use Aulicky C, Haukos D et al. PA: Carly Aulicky	*Patterns of genetic variation in the endangered yellow-nosed albatrosses revealed by high-throughput sequencing data Abeyrama DK, Ryan PG, Burg TM PA: Dilini Abeyrama
15:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Wednesday morning, 11 August 2021, 10:00-11:30 EDT

	1	2	3	4
Session	Symposium: A bird's-eye view of the microbiome – 3	Symposium: Resilient Caribbean birds: Surviving and thriving in a challenging world – 1	Symposium: Addressing aerial insectivore declines in the Western Hemisphere – 3	Symposium: Advances in the study of reproductive isolation in birds – 1
10:00 EDT	When does the gut microbiota affect bird behaviour? Davidson GL PA: Gabrielle Davidson	When capacity building comes home to roost: How small teams protect the Black-capped Petrel in Haiti Brown A, Jean A PA: Adam Brown	Aerial insectivores on the brink: Vulnerability to projected climate change Michel NL, Bateman BL, Wilsey CB PA: Nicole Michel	Introduction: The relative importance and onset of different mechanisms of reproductive isolation Campagna L, Uy JAC PA: Leonardo Campagna
10:13	Exploring the avian microbiota-gut-brain axis in captive and wild songbirds Slevin MC., Houtz JL, Vitousek MN et al. PA: Morgan Slevin	Perseverance during a pandemic: Implementation of a mainland non-native predator management program as a conservation tool for the endangered White-breasted Thrasher Mortensen J et al. PA: Jennifer Mortensen	Climate-driven changes in insect phenology shift timing of nutrient availability for declining aerial insectivores Twining CW, Shipley JR, Matthews B et al. PA: Cornelia Twining	How do assortative mating and low hybrid fitness influence "reproductive isolation"? Irwin D PA: Darren Irwin
10:26	Experimental exposure to noise alters gut microbiota in a songbird Berlow M, Wada H, Derryberry EP et al. PA: Mae Berlow	The Ridgway's Hawk (<i>Buteo ridgwayi</i>): Returning from the brink of extinction Curti M, Hayes TI, Thorstrom R et al. PA: Marta Curti	Tracking the importance of aquatic-emergent insects in the diets of aerial insectivores in southern Ontario, Canada: Towards an understanding of nutritional landscapes Hobson KA, Genier C, Bumelis K et al. PA: Keith Hobson	Cognitive adaptation, reduced movement, and female choice along a montane gradient in a food-caching bird Branch CL et al. PA: Carrie Branch
10:39	Can kiwi trust their gut? Captive rearing alters the Brown Kiwi (<i>Apteryx mantelli</i>) microbiome San Juan PA, Castro I, Dhami MK PA: Priscilla San Juan	Pre- and post-hurricane population assessment of Bridled Quail-Dove (<i>Geotrygon mystacea</i>) on St. Eustatius, Caribbean Netherlands Madden HM, Rivera-Milán FF, Verdel K PA: Hannah Madden	Forging collaborative networks to address aerial insectivore research priorities across the Americas Morrissey C, Berzins L, Norris R PA: Christy Morrissey	Unveiling the costs of bearing a novel trait: Experiments on male-male competition in Neotropical brushfinches Avendaño JE, Cadena CD PA: Jorge Avendaño
10:52	Impact of artificial rearing on the microbiota and health of endangered Whooping Crane chicks Kohl KD, Trevelline BK, Duckworth C et al. PA: Kevin Kohl	Fluctuations in bird populations in a coastal forest in Puerto Rico show resiliency after natural events Tossas AG PA: Adrienne Tossas	Questions and discussion	*Rapid speciation via the evolution of pre-mating isolation in the Iberá Seedeater Turbek SP, Taylor SA, Campagna L et al. PA: Sheela Turbek
11:05	Reproductive microbiomes: Intra- and inter-specific variation in avian ejaculate microbiomes Rowe M PA: Melissah Rowe	The role of cacao agroforests and secondary forests as reservoirs of bird diversity in Trinidad Arnold H, Deacon AE, Hulme MF et al. PA: Haley Arnold	Questions and discussion	Genomewide data reveal the role of natural and sexual selection in driving intra-island diversification in a Reunion songbird (<i>Zosterops borbonicus</i>) Milá B, Gabrielli M, Bourgeois Y et al. PA: Borja Milá
11:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Wednesday morning, 11 August 2021 (continued)

	5	6	7	8	9
Session	Contributed papers: Migration and stopover 2 Moderator: Hannah Justen	Contributed papers: Models and methods 2 Moderator: Brandon Edwards	Contributed papers: Population biology and evolution Moderator: David Chang van Oordt	Contributed papers: Song and vocalizations 2 Moderator: Dustin Reichard	Contributed papers: Evolution 2 Moderator: Oscar Johnson
10:00 EDT	*Prey DNA on talons and beaks reveals what a migrating raptor eats Bourbour RP et al. PA: Ryan Bourbour	*Trends in bird abundance differ among protected forests but not bird guilds Doser JW, Weed AS, Zipkin EF et al. PA: Jeffrey Doser	Is a river barrier hindering introgression of a sexually selected trait? Bennett KFP et al. PA: Kevin Bennett	*On geographic vocal variation and its neuroethological implications in a Neotropical songbird Fernández-Gómez RA, Morales-Mávil JE, Sosa-López JR PA: Ron Fernández-Gómez	Contrasting macroevolutionary trends between mountains and lowlands underlying diversification in Neotropical avian clades Tenorio EA, Smith BT PA: Elkin Tenorio
10:13	*Geomagnetic disturbance associated with vagrancy in migrating landbirds Tonelli BA, Youngflesh C, Tingley MW PA: Benjamin Tonelli	*grinnell: A package for dispersal simulations across geography and time to estimate calibration areas for niche and distribution models Machado-Stredel F, Cobos ME, Peterson AT PA: Fernando Machado-Stredel	Combining genetic, morphometric and ecological-niche modeling methods to assess the evolutionary origins of the Black-throated Gray Warbler (<i>Setophaga nigrescens</i>) Tofflemire MA, Klicka J, Epperly K PA: Michael Tofflemire	To the beat of their own drum: Temporal and environmental factors influence drumming display activity in the Ruffed Grouse (<i>Bonasa umbellus</i>) Martin MJ, Déaux, EC, Iwaniuk AN PA: Michelle Martin	The role of ecological divergence on time to sympatry in suboscine passerines Johnson O, Brumfield RT et al. PA: Oscar Johnson
10:26	*Reduced habitat suitability and landscape connectivity in a migratory divide Justen H, Lee-Yaw J, Delmore K PA: Hannah Justen	*Point count offsets for population sizes of North American landbirds Edwards BPM, Smith AC, Docherty T et al. PA: Brandon Edwards	CANCELLED: Population genetic differentiation and hybridization of Glaucous Gull (<i>Larus hyperboreus</i>)	Higher minimum song frequency of urban Dark-eyed Juncos (<i>Junco hyemalis</i>) persists in a common garden experiment Reichard, DG, Atwell, JW, Pandit MM et al. PA: Dustin Reichard	*The origin of the avian inner ear and its correspondence to flight and vocalization Hanson M, Hoffman EA, Bhullar B-AS et al. PA: Michael Hanson
10:39	Integrating data types to quantify multi-species migratory connectivity Saunders SP, DeLuca WV, Meehan TD et al. PA: Sarah Saunders	Guidance for analytical methods to cumulative effects assessment for terrestrial bird species Mahon CL, Pelech S PA: C. Lisa Mahon	*Early- and late-breeding Tree Swallows experience different trade-offs between immune and reproductive investment Chang van Oordt DA, Taff CC, Ryan TA et al. PA: David Chang van Oordt	Geographical variation and evolution of the vocalizations of the White-throated Magpie-Jay (<i>Calocitta formosa</i>) Vázquez-Calvillo PR, Sánchez-González LA, Sosa-López JR PA: Paulina Rebeca Vázquez-Calvillo	*Concerted variation in melanogenesis genes underlies plumage patterning in capuchino seedeaters Estalles C, Turbek SP, Rodríguez-Cajarville MJ et al. PA: Cecilia Estalles
10:52	Geolocators reveal diversity of molt and migration strategies within a single population of Lazuli Bunting Savides K, Rushing C PA: Kim Savides	What is trend? Link W, Sauer JR PA: William Link	*Exploring parasite-mediated selection and MHC diversity of two seasonally sympatric subspecies of Dark-eyed Juncos (<i>Junco hyemalis</i>) Fernandez EM, Whittaker D, Slade JWG PA: Esther Fernandez	*The loss of female vocal complexity and duetting behavior in the ancestors of Carolina Wrens (<i>Thryothorus ludovicianus</i>) Willson M, Price JJ PA: Mira Willson	Examining the patterns and drivers of bill shape evolution in Asian and African barbets Chhaya V, Reddy S, Krishnan A PA: Vaibhav Chhaya
11:05	*Using genomic data to model migratory timing: A Common Yellowthroat case study Bobowski T, Bossu C, Schweizer T et al. PA: Taylor Bobowski	Questions and discussion	Questions and discussion	Putting the speciation puzzle together: Looking at vocalizations between raven species Eastham VM, Cortes-Rodriguez N, Sturge R PA: Victoria Eastham	The energetic “pace of life” of tropical birds: Generally slow or widely diverse? Forrester TR, Martin TE PA: Timothy Forrester
11:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Wednesday afternoon, 11 August 2021, 14:00-15:30 EDT

	1	2	3	4
Session	Symposium: Lessons learned in lockdown: Impacts of the COVID-19 pandemic on birds	Symposium: Resilient Caribbean birds: Surviving and thriving in a challenging world – 2	Contributed papers: Migration and stopover 3 Moderator: Rebecca Howe	Symposium: Advances in the study of reproductive isolation in birds – 2
14:00 EDT	Effects of COVID-19 lockdowns on migratory and backyard birds: A review of research approaches and comparative results Sanderfoot OV, Schrimpf M, Koper N et al. PA: Olivia Sanderfoot	The Bahama Oriole Project — hopeful news from a Caribbean Island endemic Omland KE, Cant S, Antalfy JM et al PA: Kevin Omland	*Do migrating songbirds track the “green wave” of emerging vegetation in spring? Nemes C, Guinn S, Collins S, et al. PA: Claire Nemes	Faster evolution of song discrimination leads to faster diversification in New World passerine birds Freeman BG, Rolland J, Montgomery G et al. PA: Benjamin Freeman
14:13	Singing in a silent spring: Birds respond to a half-century soundscape reversion during the Anthropause Derryberry EP, Phillips JN, Simberloff R et al. PA: Elizabeth Derryberry	Pine forest nesting in the critically endangered Bahama Oriole: New habitat recommendations to ensure population resilience Yancy BM, Antalfy JM, Omland KE et al. PA: Briana Yancy	*Sex-ratio bias influences spring migration traits of male Yellow-rumped Warblers (<i>Setophaga coronata</i>) Deakin JE, Guglielmo CG, Morbey YE PA: Jessica Deakin	*When female mating preferences do, and do not, lead to reproductive isolation: Behavioral and genomic insights from Red-backed Fairywrens Khalil S, Karubian J, Webster MS PA: Sarah Khalil
14:26	Sudden and dramatic decrease of humans in outdoor spaces: Effects on urban Dark-eyed Juncos Diamant E et al. PA: Pamela Yeh	Monitoring disturbance and fragmentation of the endemic Caribbean pine forests of Andros, home of the critically endangered Bahama Oriole Antalfy JM, Omland KE, Fagan ME et al. PA: Janine Antalfy	*Effects of experimental malaria infection on migration of Yellow-rumped Warblers (<i>Setophaga coronata</i>) Howe R, Guglielmo C, Soares L et al. PA: Rebecca Howe	Evolution of species recognition when ecology and sexual selection favor signal stasis Price TD, Singh P PA: Trevor Price
14:39	COVID-19 lockdown reveals tourists as seabird guardians Hentati-Sundberg J, Berglund P-A, Hejdstrom A et al. PA: Per-Arvid Berglund	Avian foraging and species richness in the Retreat Gardens: A national park in urban Nassau, The Bahamas Johnson S, Johnson J PA: Scott Johnson	*Soras over Illinois: Nocturnal settlement patterns in <i>Porzana carolina</i> are site-specific but show no evidence of visual or acoustic cues Goldberg DL, Tauber AM, Ward MP et al. PA: Daniel Goldberg	Genomic regions underlying divergent plumage and migratory traits relevant to speciation in Barn Swallows Schield DR, Carter JC, Scordato ESC et al. PA: Drew Schield
14:52	Understanding the observation filter: Impacts on volunteer data collection caused by the COVID-19 pandemic Hochachka WM, Alonso H, Gutiérrez-Expósito C et al. PA: Wesley Hochachka	The birds Dorian left behind Watson BL, Johnson SB et al. PA: Bradley Watson	*A weather surveillance radar view of Alaskan avian migration Sivakumar AH, Sheldon D, Horton KG et al. PA: Ashwin Sivakumar	The genomic architecture of reproductive isolation in a hybrid zone between Bullock's and Baltimore Orioles Walsh J, Billeman SM, Butcher BG et al. PA: Jennifer Walsh
15:05	Questions and discussion	Questions and discussion	Questions and discussion	Using replicate hybrid zone transects to examine the genetic architecture of reproductive barriers Semenov G, Rice A, Robbins M et al. PA: Georgy Semenov
15:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Wednesday afternoon, 11 August 2021 (continued)

	5	6	7	8
Session	Contributed papers: Breeding biology 2 Moderator: Luke Wilde	Contributed papers: Behavior 1 Moderator: Sarah Jennings	Contributed papers: Conservation 4 Moderator: Steffi LaZerte	Contributed papers: Phylogenetics 2 Moderator: María Juliana Benitez Saldivar
14:00 EDT	*Exploring how different suites of nest predators (birds, mammals, and reptiles) respond to the playback of the begging calls of bird nestlings Liu S, Xie Q, Goodale E et al. PA: Shilong Liu	*Smells like home: Bird-scented nests as a mechanism for olfactory homing in a burrow-nesting seabird Jennings SL, Ebeler SE PA: Sarah Jennings	*Impacts of conifer removal on sagebrush songbirds Zarri EC, Martin TE PA: Elise Zarri	The evolutionary history of the troupials unveils hidden diversity within the <i>Icterus icterus</i> species complex Lucas LAS, Pili MW, Luna LW et al. PA: Layse Lucas
14:13	*The anatomy of a phenological mismatch: Interacting consumer demands and resource availability determine the consequences of mismatching Wilde LR, Simmons JE, Swift RJ et al. PA: Luke Wilde	Slight differences, dramatic consequences: Contrasting patterns of sociality along an environmental gradient in two cooperatively breeding species Johnson AE, Welkin J, Hoppe IR et al. PA: Allison Johnson	Validating the performance of citizen science establishes novel evidence base for conservation decision-making Stuber EF, Robinson O, Ruiz-Gutierrez V et al. PA: Erica Stuber	Evolutionary history of the Variable Seedeater (<i>Sporophila corvina</i>) Ocampo D, Winker K, Miller M et al. PA: Diego Ocampo
14:26	*Do female-specific social interactions influence timing of egg-laying in European starlings? Leonard KM, Williams TD PA: Kathryn Leonard	You are what you eat: Connecting foraging and breeding behavior in lekking Greater Sage-Grouse Tymstra EF, Forbey J, Patricelli GL PA: Eric Tymstra	Changes in bird abundance and phenology in the world's southernmost forest Sandvig EM, Quilodrán CS, Rivero de Aguilar J et al. PA: Erik Sandvig	Island endemic or recent introduction? Genomic data from historical specimens reveal the complex origin of Cuban bobwhites (<i>Colinus virginianus cubanensis</i>) Salter JF, Brumfield RT, Faircloth BC PA: Jessie Salter
14:39	*Hybridization dynamics of a manakin hybrid zone Long KM, Braun MJ, Brawn JD PA: Kira Long	Anthropogenic effects on European Starling nestlings' growth and cholesterol Linkous CL, Guindre-Parker S PA: Courtney Linkous	Avian morphological change driven by abiotic variation over time and space Youngflesh C, Saracco JF, Siegel RB et al. PA: Casey Youngflesh	Dorsal color variation among subspecies of the "Oregon" Dark-eyed Junco complex Yang ET, Unitt P, Mason NA PA: Elisa Yang
14:52	*Hatching failure dissected: Examining factors that lead to embryonic mortality across altricial bird species Di Giovanni AJ, Miller MJ, Jones TM et al. PA: Alexander Di Giovanni	A review of wood-warbler (Parulidae) predation of vertebrates and accounts of two new observations Akresh ME, Lamonde S, Stokes L et al. PA: Michael Akresh	Harmful algal blooms and Alaska seabirds: Saxitoxin associated with recent die-off events Van Hemert C, Smith MM, Dusek RJ et al. PA: Caroline Van Hemert	Analyzing the population structure of the Pacific Swallow, a highly dispersive island-inhabiting species Broyles G, Myers B, Scordato E PA: Grant Broyles
15:05	Songbird parents modify their behavior in open but not enclosed nests to mitigate energetic effects of rain on nestlings Mitchell AE, Wolf BO, Martin TE PA: Adam Mitchell	Questions and discussion	Management and conservation strategies for the Scarlet Macaw in Reforma Agraria, Chiapas, Mexico Ucan-Puc DE, Enríquez PL, Baltazar EB et al. PA: David Ucan-Puc	Questions and discussion
15:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Thursday morning, 12 August 2021, 10:00-11:30 EDT

	1	2	3	4
Session	Symposium: Juveniles on the move: Advancing our understanding of dispersal ecology and the mechanisms and outcomes of natal dispersal in birds – 1	Symposium: Resilient Caribbean birds: Surviving and thriving in a challenging world – 3	Symposium: Multi-species conservation planning in the face of widespread declines of North American avifauna: Exploring opportunities and avoiding pitfalls – 1	Symposium: Advances in the study of reproductive isolation in birds – 3
10:00 EDT	*Patterns and consequences of natal dispersal in a declining population of Canada Jays at the southern edge of their range Fuirst M, Strickland D, Norris DR PA: Matthew Fuirst	Resilient Caribbean birds and people: Science, outreach, and conservation in a challenging time Sorenson LG PA: Lisa Sorenson	Multi-species conservation planning in theory and practice – is a bird in hand worth two in the bush? Schmiegelow FKA PA: Fiona Schmiegelow	Near complete postzygotic isolation in three cryptic pairs of Amazonian antbirds Weir JT PA: Jason Weir
10:13	*Orphaned refugees or opportunistic queuers: Variation in natal dispersal in the cooperatively breeding Florida Scrub-Jay Suh Y, Bowman R, Fitzpatrick JW PA: Young Ha Suh	The Caribbean Motus Collaboration: Informing and promoting conservation of Caribbean birds through monitoring Wilson M, Garrod H, Gerbracht J et al. PA: Maya Wilson	Shifting From single species to multi-species and ecosystem-based approaches to conservation in Canada Camfield AF PA: Alaine Camfield	Patterns of reproductive isolation in recently sympatric <i>Myzomela</i> honeyeaters with neo-sex chromosomes Shogren EH, Uy JAC PA: Elsie Shogren
10:26	Habitat fragmentation shapes natal dispersal and genetic structure in the Placid Greenbul, an Afrotropical cooperative breeder Cousseau L, Hammers M, Van de Looek D et al. PA: Laurence Cousseau	Post-hurricane mangrove restoration in the British Virgin Islands: Practical lessons in building coastal resilience Zaluski S PA: Susan Zaluski	Single versus multi-species planning and management: A false dichotomy in bird conservation Rosenberg KV, Will TC, Easton WE et al. PA: Kenneth Rosenberg	Sperm as a reproductive barrier between species Cramer ERA PA: Emily Cramer
10:39	Early-life environmental drivers of movement in fledgling pelagic seabirds Frankish CK, Manica A, Clay TA et al. PA: Caitlin Frankish	Life cycle phenology and seasonal diet variation of Grenadian Birds in agroforests, and the contribution of diverse agricultural systems to the ecological resilience of tropical island bird communities De Ruyck CC, Koper N PA: Chris De Ruyck	Identifying full-annual-cycle groups of North American landbirds to facilitate multi-species conservation and study design Joos CJ, Camfield A, Toms T et al. PA: Cara Joos	Genomics of hybridization and isolation in extant and extinct <i>Vermivora</i> warblers Toews DPL, Baiz MD, Wood AW et al. PA: David Toews
10:52	Prospecting and informed dispersal: Understanding and predicting their joint eco-evolutionary dynamics Ponchon A, Scarpa A, Bocedi G et al. PA: Aurore Ponchon	Minimizing potential Allee effects in Psittacine reintroductions: An example from Puerto Rico White TH et al. PA: Thomas White	Integrating migration data to build full annual cycle, single and multi-species conservation prioritizations for boreal birds DeLuca WV et al. PA: William DeLuca	Evaluating evidence of mitonuclear incompatibilities with the sex chromosomes in an avian hybrid zone Lopez KA, McDiarmid CS, Griffith SC et al. PA: Kelsie Lopez
11:05	Evolution of complex social structure in a cooperative breeder Shah SS, Rubenstein DR PA: Shailee Shah	Questions and discussion	Data-driven, multi-species planning for the conservation of grassland birds in the south-central United States Fitzgerald JA, Joos CJ, Matthews A et al. PA: Jane Fitzgerald	Signatures of mitonuclear coevolution shaping cryptic differentiation in a warbler species complex Wang S, Ore M, Mikklesen E et al. PA: Silu Wang
11:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Thursday morning, 12 August 2021 (continued)

	5	6	7	8
Session	Contributed papers: Song and vocalizations 3 Moderator: Daniel Hooper	Contributed papers: Brood parasitism and behavior Moderator: Brian Peer	Contributed papers: Climate change Moderator: Kyle Horton	Contributed papers: Ecology 4 Moderator: Evan Adams
10:00 EDT	*Do male European Starlings advertise age through song? Dharmasiri ME, Barber CA PA: Mareshi Dharmasiri	*Brood engineering through a Goldilocks principle maximizes fitness for a nest-sharing brood parasite Antonson ND, Schelsky WM, Hauber ME et al. PA: Nicholas Antonson	*Morphological consequences of climate change for resident birds in intact Amazonia Jirinec V, Burner RC, Stouffer PC et al. PA: Vitek Jirinec	Evidence of niche conservatism among pairs of allopatric avian taxa in two seasonally dry Neotropical forests Freitas LV, Naka LN PA: Lays Vitorino de Freitas
10:13	*A newly discovered song type in Connecticut Warblers (<i>Oporornis agilis</i>) is variable in versatility and diel song rate at both inter- and intra-individual levels Plastino KE, Hannah KC, Foote JR PA: Kaitlyn Plastino	Empirical evidence of different egg morphs that match host eggs in the Brush Cuckoo (<i>Cacomantis variolosus</i>) Abernathy VE, Liang W PA: Virginia Abernathy	*Local adaptation and gene flow across an alpine archipelago DeSaix MG, George TL, Seglund A et al. PA: Matt DeSaix	Richness, abundance and diversity of birds in the tropical dry forest of the Sierra de Vallejo (Nayarit, Mexico) under different disturbance conditions Villegas-Raygoza BY, Quintero-Rivero ME, Espinosa A PA: Brenda Yosuki Villegas Raygoza
10:26	*Constraints imposed by migrating warblers on breeding warbler signal space Sblendorio JM, Vonhof MJ, Gill SA PA: Joanna Sblendorio	Battle for the nest: Interactions between an obligate brood parasite and its host during laying events O'Hara J, Page P, Peer BD PA: Brian Peer	A genus at risk: Predicted current and future distribution of all three <i>Lagopus</i> species reveal sensitivity to climate change and efficacy of protected areas Scridel D et al. PA: Davide Scridel	Limited evidence for distance decay across terra firme rainforest in Amazonia Luther D, Rutt C, Cooper J et al. PA: David Luther
10:39	*Call rate as an index of nest abundance and provisioning rates in wading bird colonies Larson RC, Gawlik DE PA: Rachel Larson	The role of color perception and opponent processes in avian egg recognition Hanley D, Rutledge S PA: Daniel Hanley	The role of climate in winter range shifts by eastern North American waterbirds Ramírez-Garofalo JR, Curley SR, Manne LL et al. PA: José Ramírez-Garofalo	Great Lakes Basin avian biodiversity and changes in species-area relationships with watershed position Julien A, Melles S PA: Adisa Julien
10:52	*Comparative analyses of vocalization and genomic divergence in Nashville Warblers Phung L, Toews DPL PA: Lan-Nhi Phung	Parental behavior differs by moonlight intensity in a diurnal bird species Miller CM, Taff CC, Uehling JJ et al. PA: Colleen Miller	*Elevational shifts of Great Basin birds over the past two decades Zillig MW, Fleishman E PA: Martha Zillig	A trait-based framework for predicting foodborne pathogen spillover from wild birds Smith OM, Olimpi EM, Karp DS et al. PA: Olivia Smith
11:05	Genetic constraint on song learning ability in songbirds Hooper DM, Issard C, Woolley SMN PA: Daniel Hooper	The mobbing behavior of the Brown-crested Flycatcher against a common bird of prey in a tropical dry forest Bonilla-Badilla K PA: Katherine Bonilla-Badilla	Evaluating the effects of climate change on Yellow Warblers (<i>Setophaga petechia</i>) using telomeres as a biomarker of fitness Rodríguez MD, Ruegg KC, Bay RA PA: Marina Rodriguez	Stable isotope evidence shows key farmland structure features driving Eastern Wild Turkey food selection Otieno NE, Frenette L PA: Nickson Otieno
11:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Thursday afternoon, 12 August 2021, 14:00-15:30 EDT

	1	2	3	4	5
Session	Symposium: Juveniles on the move: Advancing our understanding of dispersal ecology and the mechanisms and outcomes of natal dispersal in birds – 2	Contributed papers: Behavior 2 Moderator: Ahva Potticary	Symposium: Multi-species conservation planning in the face of widespread declines of North American avifauna: Exploring opportunities and avoiding pitfalls – 2	Contributed papers: Human dimensions Moderator: Kristin Brunk	Contributed papers: Population biology 1 Moderator: Charles Francis
14:00 EDT	Automated telemetry reveals evidence of long-distance prospecting in Kirtland's Warblers Cooper NW, Marra PP PA: Nathan Cooper	Flock mates and foraging behavior in mixed-species flocks Vander Meiden LN, Johnson AE, Shizuka D PA: Laura Vander Meiden	Evaluating the umbrella potential of the boreal caribou to achieve multi-species conservation in the Canadian boreal forest Docherty T, Stralberg D, Stewart B et al. PA: Teegan Docherty	Solving a nearly 200-year mystery to identify the oldest avian nest specimen in the Natural History Museum London Russell DGD, Yoshino T et al. PA: Tomo Yoshino	*Demography and destination: Modeling summer survival and winter migration of Canada Warblers in the central Appalachian Mountains Augustine SH, Rota CT PA: Stephanie Augustine
14:13	Impacts of the early environment on post-fledging movement patterns of Snail Kites Poli CL, Fletcher RJR PA: Caroline Poli	The impacts of irruption on chickadee social stability Rowley MG, Curry RL et al. PA: Michael Rowley	Priority areas for conservation in the Northwest Territories: Do we need to choose between boreal birds and caribou? Micheletti T, Stewart FEC, Haché S et al. PA: Samuel Hache	The bird that laid the cosmic egg Taylor B PA: Bernie Taylor	*Staying stable with fluctuations: How environmental cycles and demography influence a Florida Scrub-Jay population Summers J, Bowman R, Fitzpatrick JW et al. PA: Jeremy Summers
14:26	Empirical tests of habitat selection theory reveal that conspecific density and patch quality, but not habitat amount, drive long-distance immigration in a wild bird Rushing CS, Ryder TS, Valente JJ et al. PA: Clark Rushing	Origin of novel population dynamics through behavioral feedbacks in a passerine bird Potticary AL, Aguilon SM, Duckworth RA PA: Ahva Potticary	Using multi-species data to establish indicators for adaptive management in the boreal forest Van Wilgenburg SL, Heisler L, Fisher R et al. PA: Steven Van Wilgenburg	So you want to write research-based fiction Niehaus AC PA: Amanda Niehaus	*Estimating population trends of gulls and cormorants for coast-wide aerial imagery in Maine Lewis MA, Kline LR, Loftin CS et al. PA: Meredith Lewis
14:39	Using wing morphology to determine variation in natal dispersal distances in North American birds Chu JJ, Claramunt S PA: Jonathan Chu	Has artificial selection driven anatomical changes in the brain of the homing pigeon (<i>Columba livia</i>)? Guyonnet AEM et al. PA: Audrey Guyonnet	Prioritizing the conservation of migratory birds and resident vertebrates in the Neotropics under alternative planning strategies Wilson S, Lin H-Y, Schuster R et al. PA: Scott Wilson	Welfare-conscious approaches to handling and obtaining samples from hummingbirds Tell LA PA: Lisa Tell	*Local versus broad-scale drivers: A Bayesian state-space analysis of long-term waterbird colony dynamics Van Tatenhove AM, Rushing CS PA: Aimee Van Tatenhove
14:52	Questions and discussion	A songbird inhibits blinking behavior in flight Yorzinski JL PA: Jessica Yorzinski	A habitat-based approach to developing a Conservation Investment Strategy for three migratory birds that depend on Latin America's mid-elevation forests Stewart RLM, Bayly NJ, Dettmers R et al. PA: Becky Stewart	Questions and discussion	*Community characteristics of forest understory birds along an elevational gradient in the Horn of Africa: A multi-year baseline Kittelberger KD, Neate-Clegg MHC, Sekercioglu ÇH et al. PA: Kyle Kittelberger
15:05	Questions and discussion	A review of scientific evidence on the impact of frightening devices to protect crops from avian pests Enos JK, Ward MP, Hauber ME PA: Janice Enos	Multi-species conservation in Mesoamerica and Cuba: Lessons from the field Rossi NA, McNab R PA: Natalia Rossi	Questions and discussion	National population trends of Blackpoll Warbler: An integrated analysis of migration counts and stable isotopes Iles DT, Dunn EH, Van Wilgenburg SL et al. PA: David Iles
15:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Thursday afternoon, 12 August 2021 (continued)

	6	7	8
Session	Contributed papers: Conservation 5 Moderator: Anna Lello-Smith	Contributed papers: Evolution and genomics 2 Moderator: Phred Benham	Symposium: The evolutionary ecology and conservation of mega-diverse tropical montane avifaunas
14:00 EDT	Repeated burning undermines the conservation value of restored cattle pastures in Guatemala for tropical resident birds Lello-Smith A, Rodewald AD, Ruiz-Gutierrez V et al. PA: Anna Lello-Smith	*A supergene underlies phenotypic variation in redpolls Funk ER, Mason NA, Taylor SA et al. PA: Erik Funk	What we can learn about evolution, ecology and conservation from studying tropical montane birds, Freeman BG , PA: Benjamin Freeman Drivers of avian richness and turnover in the Peruvian Andes, McNew SM, Barrow LN, Williamson JL et al. , PA: Sabrina McNew The role of gene flow in reducing biodiversity along elevational gradients, Luzuriaga-Aveiga VE, Ugarte M, Weir J , PA: Vanessa Luzuriaga
14:13	Rainforest bird communities partially recover in 35-year-old Amazonian secondary forest Stouffer PC, Rutt CL, Vargas CF PA: Philip Stouffer	*The importance of gene flow in archipelagos: Case study in a Pacific island flycatcher Gyllenhaal EF, Klicka LB, DeCicco LH et al. PA: Ethan Gyllenhaal	CANCELLED: Phylogenetic modeling of elevational range shifts as a way of understanding montane biodiversity hotspots Birds short-circuit the community assembly cycle: Testing Diamond's continuous speciation model, Reijenga BR, Murrell DJ, Pigot AL , PA: Bouwe Reijenga How phenotypic plasticity and natural selection shape blood-oxygen carrying capacity and elevational ranges in Andean birds, Linck EB, Williamson JL, Bautista E et al. , PA: Ethan Linck
14:26	Occupancy probability of bird species in relation to the structural vegetation complexity of a coffee landscape in Costa Rica Molina-Mora I, Ruiz-Gutierrez V, Sandoval L et al. PA: Ingrid Molina-Mora	*Few genomic regions underlie phenotypic differentiation in <i>Sporophila beltoni</i> , a recently described seed-eater species from southern Brazil Nguyen TN, Repenning M, Fontana CS et al. PA: Tram Nguyen	Evolution of blood-oxygen carrying capacity in hummingbirds, Williamson JL, Linck EB, Bautista E et al. , PA: Jessie Williamson Thermal niche breadth and diet explain variation in elevational migration in Himalayan birds, Barve S, Menon T, Ramesh V , PA: Sahas Barve CANCELLED: Estimating dietary niche width in a Neotropical highland endemic bird with multi-tissue stable isotope analysis
14:39	Multi-scale drivers of restoration outcomes for an imperiled songbird McNeil DJ, Rodewald AD, Ruiz-Gutierrez V et al. PA: Darin McNeil	Is the passerine superradiation defined by a unique growth hormone gene duplication? Rasband S, Bolton PE, Fang Q et al. PA: Shauna Rasband	Changing patterns of nest predation and predator communities along a tropical elevation gradient, Londoño GA, Sánchez-Martínez MA, Gomez JP et al. , PA: Gustavo Londoño Are birds ever "really" limited by temperature?, Socolar JB , PA: Jacob Socolar 100-year resurvey of Mexico shows differential impact on montane vs. lowland avifaunas to climate change and land use, Terrill RS, Tingley MW, McCormack JE et al. , PA: Ryan Terrill
14:52	CANCELLED: Initial evaluation of avian use of agricultural cover crops during the winter, migration stopover, and the breeding season in Tennessee	Spatial variation in population genomic responses to anthropogenic change within tidal marsh populations of the Savannah Sparrow Benham PM, Walsh J, Bowie RCK PA: Phred Benham	Increasing temperatures are driving population declines in a biodiversity hotspot indicator species, the Cape Rockjumper (<i>Chaetops frenatus</i>), Oswald KN , PA: Krista Oswald The escalator race: Ecological correlates of elevational range shifts in tropical birds, Neate-Clegg MHC, Jones SEI, Tobias JA et al. , PA: Monte Neate-Clegg Questions and discussion
15:05	Balancing conservation priorities for grassland and forest specialist bird communities in an agriculture-dominated landscape Alavi N, de Zwaan DR, Mitchell G et al. PA: Niloofar Alavi	Questions and discussion	Questions and discussion
15:18	Questions and discussion	Questions and discussion	Questions and discussion

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Friday morning, 13 August 2021, 10:00-11:30 EDT

	1	2	3	4
Session	Symposium: How birds sense the world – 1	Symposium: Diversity, equity, inclusion, and justice: Research and practice in bird conservation	Symposium: Multi-species conservation planning in the face of widespread declines of North American avifauna: Exploring opportunities and avoiding pitfalls – 3	Contributed papers: Molt and plumage Moderator: Daniel Baldassarre
10:00 EDT	Not only pigeons: Avian olfactory navigation studied by satellite telemetry Bonadonna F, Gagliardo A PA: Francesco Bonadonna	Bias in birdwatchers: Does neighborhood incomes affect estimates of bird richness? Perkins DJ, Cooper CB, Katti M PA: Deja Perkins	The Partners in Flight Focal Species Approach: Using multispecies indicators to inform oak woodland conservation planning and implementation in the Klamath Siskiyou Bioregion of southern Oregon and northern California Alexander JD, Gillespie CR, Halstead KE et al. PA: John Alexander	The cost of reproduction does not affect moult feather quality in Thick-billed Murres (<i>Uria lomvia</i>) MacDonald EC, Patterson A, Elliott KH PA: Emily MacDonald
10:13	*A global screen for magnetic field-driven neuronal activity in the pigeon brain Nordmann GC, Balay SD, Nimpf S et al. PA: Gregory Nordmann	Ethno-racial and social patterns in birdwatcher specialization Rutter JR, Dayer AA, Duberstein JN et al. PA: Jonathan Rutter	Multi-species conservation planning for declining grassland bird populations in Prairie Canada Robinson BG, Ball JR PA: Barry Robinson	*Climate variation influences the timing of the adult pre-basic molt among four passerine species in northern California Tattoni DJ, Hendershot JN PA: D. Julian Tattoni
10:26	Functional evolution of avian taste receptors Baldwin MW, Toda Y PA: Maude Baldwin	Moving beyond barriers to enacting DEI in conservation Morales N PA: Nia Morales	A habitat and biodiversity assessment tool to prioritize multi-species conservation actions on agricultural lands Blouin F, Wilmschurst JF, Harder J et al. PA: Francois Blouin	Does living in the city make Northern Cardinals change color? Baldassarre DT, Drzewiecki KM PA: Daniel Baldassarre
10:39	The form and function of avian rectal bristles Delaunay MG, Larsen C, Grant RA PA: Robyn Grant	"Life as a 'birder'" — how the intersectionality of motives, benefits, and values can help BIPOC birders exist in the field Newberry, III MG PA: Milton Newberry	Listen, Learn, Liaise: Replacing the three S's with the three L's for successful multispecies conservation programs Downey B et al. PA: Brad Downey	The mechanical design of woodpecker tails as an adaptation to scansorial habits Poledri BL, Lijtmaer DA, Tubaro PL PA: Brenda Poledri
10:52	Molecular analysis of mechanoreceptors in the domestic duck bill (<i>Anas platyrhynchos</i>) Hart TR, Flynn JA, Schneider ER PA: Eve Schneider	Representative public science: How two black grad students are making science accessible to all Burgess M, Pharr L, Cooper C PA: Lauren Pharr	Lessons from flyway-scale shorebird conservation planning Clay RP, Johnston S, Gates R et al. PA: Rob Clay	What do we really know about the water repellency of feathers? Muzio FM, Rubega MA PA: Frank Muzio
11:05	The avian lumbosacral organ and the potential for balance sensation in the spinal cord Stanchak KE, Miller KE, Lumsden EW et al. PA: Kathryn Stanchak	Addressing barriers to diversity in bird conservation Bonfield SB, Dorta D, Díaz-Mendez S et al. PA: Susan Bonfield	An overview of the Eastern Habitat Joint Venture multi-species conservation planning Hanson A, Morais T PA: Alan Hanson	Questions and discussion
11:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Friday morning, 13 August 2021 (continued)

	5	6	7	8
Session	Contributed papers: Behavior 3 Moderator: Lucas Redmond	Contributed papers: Breeding biology 3 Moderator: Sarah Winnicki	Contributed papers: Conservation 6 Moderator: Nico Arcilla	Contributed papers: Genomics 2 Moderator: Lan-Nhi Phung
10:00 EDT	Working hard or hardly working: A review of diurnal and nocturnal activity budgets suggests inactivity is a common behavior in free-living birds Hodinka BL, Williams TD PA: Brett Hodinka	A call for fully accounting for effects of nest age when quantifying nest survival Weiser EL PA: Emily Weiser	Conspecific attraction for conservation and management of terrestrial breeding birds: Current knowledge and future research directions Valente JJ, LeGrande-Rolls CL, Rivers JW et al. PA: Jonathon Valente	Parallel genomic signatures of local adaptation across a continental-scale environmental gradient in two North American woodpeckers Moreira LR, Smith BT PA: Lucas Rocha Moreira
10:13	*Offspring provisioning effort in European Starlings (<i>Sturnus vulgaris</i>) during the nestling rearing period Ozbek S, Barber C PA: Sara Ozbek	CANCELLED: Early environment and condition dependence in a lifelong sexual signal: Gene expression and melanin color in Barn Swallows	Local grassland bird declines were not explained by long-term changes in reproductive output Smith DJ, Silber KM, Williams EJ et al. PA: Dylan Smith	*Variable hybridization across multiple Red-breasted x Red-naped Sapsucker hybrid zones Natola L, Irwin DE et al. PA: Libby Natola
10:26	Nestling provisioning of Gray Catbirds: Do males play a larger role than expected? Medica JJ, Redmond LJ PA: Lucas Redmond	*Body temperature and reproductive effort in a long-lived tropical songbird Jackson HR, Martin TE PA: Holly Jackson	Is hay for the birds? Investigating landowner willingness to time hay harvests for grassland bird conservation Gruntorad MP, Graham KA, Arcilla N et al. PA: Nico Arcilla	Sex-linked inversion underlies divergence between the Golden-crowned Sparrow (<i>Zonotrichia atricapilla</i>) and the White-crowned Sparrow (<i>Zonotrichia leucophrys</i>) McCallum Q, Askelson K, Fogarty F et al. PA: Quinn McCallum
10:39	Enhancing tropical avian behavioral ecology via ddRAD-seq: Genetic mating system of the Black Catbird (<i>Melanoptila glabrirostris</i>) as a case study LaPergola JB, Riehl CP, Roldán-Clarà B et al. PA: Joshua LaPergola	Egg-laying order, maternal effects, and embryonic growth in American Robins (<i>Turdus migratorius</i>) Winnicki SK, Benson TJ, Paitz RT et al. PA: Sarah Winnicki	Using citizen science to optimize spatial conservation planning for grassland birds Nunes LA, Ribic CA, Zuckerberg B PA: Christine A. Ribic	Variations in genomic architecture among Horned Larks (<i>Eremophila alpestris</i>) along an elevational gradient in western USA Shakya SB, Wang-Claypool CY, Cicero C et al. PA: Subir Shakya
10:52	Seeking shelter: Winter weather constrains the behavioral flexibility of a winter-adapted bird Shipley AA, Zuckerberg B PA: Amy Shipley	Variation in breeding timing and habitat drive age-specific reproductive success of the endangered Golden-cheeked Warbler (<i>Setophaga chrysoparia</i>) Jukkala GL, Sperry JH, Ward MP PA: Gabriella Jukkala	Drivers of fatal bird collisions in an urban center Van Doren BM, Willard D, Hennen M et al. PA: Benjamin Van Doren	Characterizing genomic patterns of divergence in non-model avian systems: Which sequencing method is best? Szarmach SJ, Toews DPL et al. PA: Stephanie Szarmach
11:05	Northern Bobwhite breeding movements, survival, and the cost of reproduction Behney AC PA: Adam Behney	Modeling breeding phenology from the North American Breeding Bird Survey Sauer JR, Link WA PA: John Sauer	Rethinking invasion theory and practice: A case study in the European Starling (<i>Sturnus vulgaris</i>) Hofmeister NR PA: Natalie Hofmeister	Questions and discussion
11:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Friday afternoon, 13 August 2021, 14:00-15:30 EDT

	1	2	3	4
Session	Symposium: How birds sense the world – 2	Symposium: Using social science to understand and shape human behaviors related to birds and their conservation	Contributed papers: Annual cycle Moderator: Autumn Iverson	Contributed papers: Ecology 5 Moderator: David Mehlman
14:00 EDT	Avian infrasonic sensitivity: Is this a niche ability, or pervasive sensory phenomenon? Hill EM PA: Evan Hill	Advancing scientific knowledge and conservation of birds through inclusion of conservation social sciences Dayer AA , Barnes JC , Dietsch AM et al. PA: Ashley Dayer	Evidence of nomadic behavior in Black-billed and Yellow-billed Cuckoos and implications for conservation strategies Johnson C , Benson TJ PA: Claire Johnson	A post-fledging perspective: Does parent-offspring conflict help mediate the age of fledging in songbirds? Jones TM , Ward MP et al. PA: Todd Jones
14:13	A private channel of communication: High-frequency vocalizations and hearing in hummingbirds Duque FG PA: Fernanda Duque	Understanding attitudes and norms of beach recreationists to reduce disturbances to shorebirds Comber CA , Dayer AA PA: Carolyn Comber	How the timing of long-distance migration in songbirds responds to an experimental manipulation of photoperiod in the wild Bani Assadi S , Fraser KC PA: Saeedeh Bani Assadi	Long-term capture data reveal temporal shifts in activity patterns of Amazonian birds Rutt CL , Cooper WJ , Luther DA PA: Cameron Rutt
14:26	Audition of Northern Saw-whet Owls (<i>Aegolius acadicus</i>) Gall MD , Proudfoot GA PA: Megan Gall	Supporting durable grassland habitat conservation through farm bill programs using social-ecological systems science Barnes JC , Dayer AA , Iovanna R et al. PA: Jessica Barnes	Arrival time and habitat use of migratory birds wintering in northern Ghana, West Africa Boakye Yiadom S , Goded S , Arcilla N et al. PA: Samuel Boakye Yiadom	Expansion and contraction of ecological niche space drives the disassembly of cloud forest bird communities in tropical montane countrysides Ausprey IJ , Newell FL , Robinson SK PA: Ian Ausprey
14:39	The neural encoding of optic flow differs among bird species with distinct flight modes Altshuler DL , Gaede AH , Wylie DR PA: Doug Altshuler	Stakeholder perceptions as an essential tool for Golden Eagle conservation in the American West McGough LM , Wallen KE , Bickford NA PA: Lauren McGough	Breeding habitats, phenology and size of a resident population of Two-banded Plover (<i>Charadrius falklandicus</i>) at the northern edge of its distribution Faria FA , Repenning M , Nunes GT et al. PA: Fernando Faria	Foraging and aggression of non-breeding shorebirds on a habitat mosaic — Bulls Island, South Carolina Jamieson EG , Sanders F , Nol E PA: Ellen Jamieson
14:52	Integrating visual and somatosensory information in the avian brain Wylie DR , Gutierrez-Ibanez C , Fernandez M et al. PA: Douglas Wylie	How participation in community science on private lands influences participants' conservation behaviors Green RE , Dayer AA , Johnson AEM PA: Rachael Green	Full annual cycle of a small migrating songbird species, the Golden-crowned Sparrow, tracked with GPS Iverson AR , Cormier RL , Humble DL PA: Autumn Iverson	Examining avian species richness, diversity, and turnover in a private working forest Bracken RD , Greene DU , Miller DA et al. PA: Rebecca Bracken
15:05	Estimating the sensory abilities of extinct species Iwaniuk AN PA: Andrew Iwaniuk	Questions and discussion	North American waterfowl migratory connectivity across flyways Scarpignato AL , Roberts AJ , Huysman A et al. PA: Amy Scarpignato	Changes in forest structure and nesting behavior of Hawai'i 'elepaio over 25 years Jaenecke KA , Banko PC PA: Kelly Jaenecke
15:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Friday afternoon, 13 August 2021 (continued)

	5	6	7	8
Session	Contributed papers: Evolution 3 Moderator: Silu Wang	Contributed papers: Population biology 2 Moderator: Charles Francis	Contributed papers: Models and methods 3 Moderator: Tom Auer	Contributed papers: Migration and stopover 4 Moderator: Maggie MacPherson
14:00 EDT	Ecomorphological data suggests variable impacts of adaptation, allometric change, and historical contingency during the evolution of skull shape in shorebirds (order: Charadriiformes) Natale RN, Slater GJ PA: Rosy Natale	Using integrated population models to understand drivers of population change over 55 years in two species of Finnish owls Francis CM, Saurola P PA: Charles Francis	eBird status and trends update: Distributions, abundances, and habitat associations for 800+ species Auer T, Fink D, Johnston A et al. PA: Tom Auer	Comparing migration timing, rate, and routes between populations of Canada Geese (<i>Branta canadensis</i>) and Cackling Geese (<i>Branta hutchinsii</i>) breeding at different latitudes Neufeld LR, Baldwin F, Fraser KC PA: Leanne Neufeld
14:13	Evolutionary implications of genetic variation around Amazonian rivers: A case study of the Blue-crowned Manakin Moncrieff AE, Faircloth BC, Brumfield RT PA: Andre Moncrieff	Landscape structure and habitat change affects the abundance and distribution of wintering Neotropical migratory shorebirds Herbert JA, Mizrahi D, Gunn G et al. PA: John Herbert	An update on the use of drones to study and conserve birds Bird DM PA: David Bird	The hormone ghrelin affects migratory behaviour in a migratory wood-warbler Lupi S, Morbey YE, Kaiya H et al. PA: Sara Lupi
14:26	The evolution of Darwin's finches: Whole-genome sequencing of an entire community of finches on Daphne Island Enbody ED, Sprehn CG, Andersson L et al. PA: Erik Enbody	Metapopulation dynamics of adult Northern Great Plains Piping Plovers Swift RJ, Anteau MJ, Ellis KS et al. PA: Rose Swift	Combining point counts and autonomous recording units improves avian survey efficacy in temperate mountain habitats of the Americas Drake A, de Zwaan DR, Altamirano TA et al. PA: Anna Drake	Irruption of White-breasted Nuthatches when mast yields are low in the northeast Heveran PH, Dreehn A, Dunn EH et al. PA: Paul Heveran
14:39	Genetic similarity of New Guinea parrotfinches suggests that they are not two species DeCicco LH, DeRaad DA, Hime PM et al. PA: Lucas DeCicco	Long-term demography of a reintroduced and isolated population of endangered falcons Rolek BW, Pauli B, McClure CJW et al. PA: Brian Rolek	Modeling the spatial patterns in trends, and covariates of trends, for North American bird populations Smith AC PA: Adam C. Smith	Nocturnal roost on South Carolina coast supports nearly half of Atlantic coast population of Hudsonian Whimbrel (<i>Numenius phaeopus</i>) during northward migration Sanders FJ, Handmaker MC et al. PA: Maina Handmaker
14:52	Using range edges to understand drivers of avifaunal divergence on the Thai-Malay Peninsula Oong Z, Reddy S PA: Zheng Oong	Social network structure in winter flocks involving chickadees and titmice in New York Boyle MN, Bonter DN, Curry RL PA: Margaret Boyle	Rate of avian telomere shortening across DNA sample types Mason NM PA: Noelle Mason	Effects of space weather on radar-detected bird migration Gulson-Castillo ER, Van Doren BM, Winger BM et al. PA: Eric Gulson-Castillo
15:05	Opposing dominance within a color gene block is associated with maladaptive hybrid signal discordance de Zwaan DR, Mackenzie J, Wang S et al. PA: Silu Wang	Demographic inference of commensal swallows in southeast Asia and Oceania Myers BM, Hund AK, Friedman N et al. PA: Brian Myers	Questions and discussion	Morphology of migration: Associations between wing shape, bill morphology, and migration in kingbirds (<i>Tyrannus</i>) MacPherson M, Jahn A, Mason N PA: Maggie MacPherson
15:18	Questions and discussion	Questions and discussion	Questions and discussion	Questions and discussion

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Symposia

Addressing aerial insectivore declines in the Western Hemisphere

Organizers: Tara L. Imlay and Kevin Kardynal

Tuesday, 10 August 2021: 10:00 – 11:30 and 14:00 – 15:30 EDT

Wednesday, 11 August 2021: 10:00 – 11:30 EDT

North America avian aerial insectivores have undergone steep population declines over the past half century. This symposium features a diverse group of speakers who will provide overviews of research examining evidence for the role of climate change, aerial insects, and agricultural intensification on population trends of aerial insectivores, population models that deliver insight into the limiting periods and demographic rates for aerial insectivores, and the threats to species during the breeding and non-breeding periods. This symposium also introduces a research group working collaboratively to address some of the key questions on aerial insectivore declines and their conservation. Through these presenters, we provide diverse perspectives on aerial insectivore declines to create a thought-provoking, inclusive, and focussed symposium that highlights the importance of working together on issues facing aerial insectivore populations.

Advances in the study of reproductive isolation in birds

Organizers: Leonardo Campagna and J. Albert C Uy

Wednesday, 11 August 2021: 10:00 – 11:30 and 14:00 – 15:30 EDT

Thursday, 12 August 2021: 10:00 – 11:30 EDT

The biological species concept defines species based on the evolution of reproductive isolation. Therefore, to better understand the speciation process researchers need to study the evolution of barriers that prevent gene flow between divergent populations. This symposium will explore advances in our understanding of how barriers to gene flow are established. We will cover barriers that act before mating, or prezygotic barriers, such as behavioral changes that affect mating signals, changes in foraging or migration behavior, and reproductive timing. We will also focus on the postzygotic barriers that act after mating, such as selection against hybrids displaying intermediate phenotypes or the evolution of genetic incompatibilities, chromosomal rearrangements and neo-sex chromosomes. We will explore when in the speciation process these different barriers may arise, their relative strength and likely prevalence in nature. We also aim to include both empirical and theoretical examples, and taxa from different biogeographic regions of the world where different types of reproductive barriers may be at play. We expect the symposium to appeal widely to evolutionary biologists, but also to those interested in behavioral ecology, genetics and genomics.

A bird's eye view of the microbiome

Organizers: Brian K. Trevelline, Elin Videvall, and Kevin Kohl

Tuesday, 10 August 2021: 10:00 – 11:30 and 14:00 – 15:30 EDT

Wednesday, 11 August 2021: 10:00 – 11:30 EDT

A recent surge in research has demonstrated that the microbiome—the archaeal, bacterial, fungal and viral communities residing on and inside organisms—profoundly influence host health and performance through their impacts on the immune system, digestion, development, and behavior.

However, most of these investigations have focused on humans or model organisms. While research into roles that microbes play in the ecology and evolution of their hosts is a rapidly growing area, the importance of the gut microbiome in birds is poorly understood. This symposium brings together researchers that investigate avian host-microbe interactions in a variety of natural and experimental systems, addressing questions that span several areas of ornithological research. This symposium will expose attendees to a wide-breadth of theory, cutting-edge research, and applications of microbiome science as it applies to birds, covering topics such as avian digestive physiology and immunity, phyllosymbiosis, microbiome assembly, developmental plasticity, environmental and nutritional effects, seasonal variation, correlates with host fitness, and applications to conservation practices.

Diversity, equity, inclusion, and justice: Research and practice in bird conservation

Organizers: Judith Scarl, Deja Perkins, Jonathan Rutter, Ashley A. Dayer, Jennie Duberstein, Dr. Nia Morales, Murry Burgess, Lauren D. Pharr, Caren B. Cooper, Susan Bonfield, Sheylda Diaz-Mendez, and Dalia Dorta

Friday, 13 August 2021: 10:00 – 11:30 EDT

The ornithological community, including amateur birdwatchers as well as professional scientists and conservationists, has historically not reflected the diversity of the demographics in the United States. Increasingly, outdoor recreation organizations are exploring barriers to participation in birdwatching and related outdoor activities for diverse constituencies, and conservation groups are seeking to improve representation and inclusion within the conservation field. This symposium will explore the relationship between race, ethnicity, and engagement in amateur and professional activities focused on birds. It will highlight research on factors influencing how different groups engage with birds and the outdoors, and it will showcase models of how individuals and organizations are using data-driven approaches to serve and include broader communities in conservation and outdoor recreation.

Great R packages for ornithologists (lightning symposium)

Organizer: Stefanie LaZerte

Tuesday, 10 August 2021: 10:00 – 11:30 EDT

R is powerful free and open-source software (FOSS) for statistical programming. Because R is FOSS it reduces financial barriers to conducting science and is therefore used by ornithologists all over the world with different backgrounds and experiences. R can be extended with “packages” developed by this community, but exploring the thousands of packages available can be overwhelming. In this lightning symposium speakers will introduce ornithologists to a range of useful R packages from general, to domain, to specialized. First, we introduce how to find packages in general, next we have 14 presentations featuring specific packages and their applications to avian studies. We end with an introduction to a new ornithology task view (a curated package collection). This will lead to a discussion of other packages ornithologists use or would like to see developed.

How birds sense the world

Organizer: Andrew N. Iwaniuk

Friday, 13 August 2021: 10:00 – 11:30 and 14:00 – 15:30 EDT

Sensory systems dictate how birds experience and interact with the world around them. Determining the acuity and sensitivity of the senses and how different species use sensory

information is therefore incredibly important for understanding the behavior and ecology of birds, including their conservation and management. In recent years, there has been an explosion of research into avian senses, but it is widely dispersed across disciplines and approaches. The aim of this symposium is to bring these diverse researchers together to showcase recent advances and the various methods used to study the sensory abilities of birds. In doing so, the symposium will provide a unique and integrative view of the sensitivity and acuity of the senses across all birds. The list of topics to be covered includes: vision in predatory species, motion detection, sound localization, ultrasonic and low frequency hearing, the sense of touch in the beak and facial bristles, olfactory navigation, magnetoreception, the senses of taste and balance, and the sensory abilities of extinct and endangered species. Within these topics, the speakers will cover molecular, physiological, anatomical, evolutionary, and behavioral approaches and discuss the implications of their research for understanding avian sensory abilities as well as avian evolution, ecology, management, and conservation.

Juveniles on the move: Advancing our understanding of dispersal ecology and the mechanisms and outcomes of natal dispersal in birds

Organizers: Matthew Furst and Young Ha Suh

Thursday, 12 August 2021: 10:00 – 11:30 and 14:00 – 15:30 EDT

Natal dispersal, the movement of individuals from their birthplace to their breeding location, is a process that significantly influences individual survival and lifetime reproductive success, and serves as the main mechanism for gene flow within a population. Its ecological and evolutionary significance makes natal dispersal central to many questions in theoretical and applied ecology. Historically, dispersal has been understudied due to limitations with following individuals over time and space. However, due to recent advances in telemetry, molecular, and re-sighting techniques, studies on natal dispersal have been increasing in frequency and scope, shedding critical new light on the movements of young animals. In this symposium, individuals specializing in dispersal ecology will present cutting-edge research investigating causes and consequences of natal dispersal. Connecting individual movement to population processes, talks will explore a wide array of methods and applications for studying natal dispersal patterns in wild bird populations. Speakers will present research that examines the mechanisms and demographic consequences of avian natal dispersal strategies. The symposium will end with a half-hour discussion, in which panel speakers and other attendees can discuss approaches and considerations for field and analytical methods used to study natal dispersal.

Lessons learned in lockdown: Impacts of the COVID-19 pandemic on birds

Organizer: Michael B. Schrimpf

Wednesday, 11 August 2021: 14:00 – 15:30 EDT

During the first wave of the COVID-19 pandemic in the spring of 2020, a series of lockdowns upended day-to-day life and dramatically altered the global human footprint. This unprecedented moment in human history presented both challenges and opportunities for ornithologists around the world. While lockdowns forced many researchers to rethink plans to conduct field and laboratory studies, they also created a natural, global experiment—a once-in-a-lifetime chance to observe how birds respond to changes in human behavior. Ornithologists around the world leveraged the event to learn more about how travel, commerce, and other human activities impact birds and explored how lockdowns shaped community science. Together, they found creative ways to advance ornithology and avian conservation. In this session, speakers will discuss how COVID-19 lockdowns affected the distribution, behavior, and reproductive success of birds, compare and contrast responses among species and geographic locations, and highlight impacts of the pandemic on data collection. Speakers will explore how avian responses to COVID-19 lockdowns can inform

future conservation efforts, especially in urban environments where impacts were felt the most. The session will include five invited talks followed by a 15-minute discussion period to facilitate planning future international, collaborative efforts to study the short- and long-term consequences of the pandemic on birds and lessons learned for avian conservation.

Multi-species conservation planning in the face of widespread declines of North American avifauna: Exploring opportunities and avoiding pitfalls

Organizer: Barry Robinson

Thursday, 12 August 2021: 10:00 – 11:30 and 14:00 – 15:30 EDT

Friday, 13 August 2021: 10:00 – 11:30 EDT

The estimated loss of 3 billion birds in North America over the last 50 years represents a crisis. While some taxa have declined more significantly than others, most biomes across North America have had a net loss of birds over this time. As a result, there is an urgent need for broad-scale, multi-species conservation action now to stem further losses. The objective of this symposium is to address the loss of 3 billion birds by improving the efficiency and efficacy of conservation delivery through multi-species planning. We will present and discuss real world examples of multi-species conservation action targeting bird populations in different biomes to share ideas, stimulate innovation and identify potential barriers to success. Presentations will cover (1) theory, best practices and policies related to multi-species conservation planning, (2) the development of multispecies plans from an objective statement to an actionable plan, and (3) real-world examples of implementation.

Resilient Caribbean birds: Surviving and thriving in a challenging world

Organizers: Lisa G. Sorenson and Adrienne G. Tossas

Wednesday, 11 August 2021: 10:00 – 11:30 and 14:00 – 15:30 EDT

Thursday, 12 August 2021: 10:00 – 11:30 EDT

The insular Caribbean is recognized as one of the top five global biodiversity conservation hotspots, yet this important region's wildlife face numerous threats, from destruction of habitats for development to more frequent and extreme weather events exacerbated by climate change. The region is of exceptional importance to birds, hosting 171 endemic species and serving as a key migratory route for more than 100 migrants whose journeys between the North and South American mainlands depend on quality habitat throughout the islands. BirdsCaribbean and its large network of partners across the Caribbean have recognized that in order for birds and their habitats to survive and thrive during these times of rapid change, conservationists and communities must share resources, collaborate, and flock together to stem the tides of avian loss. During our symposia, members of the BirdsCaribbean community—scientists, conservationists, students, and volunteers—will share their work and lessons learned on building resilience for the region's resident and migratory bird species. The diversity of research and accomplishments showcased in this symposium is a testament to the region's tenacious spirit, comradery, resourcefulness, and inherent passion for their natural world. It is also a testament to the resilience of birds—that many species of birds can survive if we give them the chance to do so, by alleviating threats, protecting habitats, and engaging communities in conservation.

The evolutionary ecology and conservation of mega-diverse tropical montane avifaunas (lightning symposium)

Thursday, 12 August 2021: 14:00 – 15:30 EDT

This symposium showcases research on montane birds in the tropics and subtropics around the globe. Tropical mountains are Earth's hottest biodiversity hotspots; this spectacular diversity is the result of species living within relatively narrow elevational distributions. A focus on elevational distributions - how they evolve, and the factors that limit species to restricted elevational zones - thus helps us understand major patterns in biodiversity. Moreover, these fundamental ideas have taken on renewed relevance in the climate change era, as warming temperatures are predicted to cause species to shift their elevational distributions upslope, potentially setting in motion an "escalator to extinction" that threatens the persistence of high elevation populations and species. In sum, this symposium will examine the evolution, ecology and conservation of the most species-rich avifaunas on Earth, addressing how this diversity – birds of many feathers – originated and how it is faring in the Anthropocene.

Using social science to understand and shape human behaviors related to birds and their conservation

Organizers: Jessica Cavin Barnes and Ashley A. Dayer

Friday, 13 August 2021: 14:00 – 15:30 EDT

Across ecological landscapes and bird guilds, bird conservation is heavily influenced by cultural, legal, political, economic, and social factors. Ornithologists, ecologists, and conservation practitioners increasingly recognize the need to flock together with social scientists to effectively address many of the most significant threats to birds, including habitat loss, overharvesting, and invasive species. In 2020, the American Ornithological Society (AOS) issued an explicit invitation for social science submissions to Ornithological Applications, building from recommendations by Dayer et al. (2020) to increase inclusion of the social sciences in AOS. This symposium maintains momentum behind the inclusion of social sciences in AOS activities by drawing attention to the value of social science theories, methods, and insights for understanding and shaping human behaviors that impact bird conservation on private and public lands. The studies presented in this session use a variety of social science lenses and methods and span diverse North American landscapes, including the American West, southern Great Plains, Atlantic Flyway, and working lands of Virginia. This symposium provides insights for engaging birders, beach users, private landowners, and community scientists as key stakeholders in the conservation of rare and common birds, and highlights ways in which inclusion of social scientists in the bird conservation flock can support data-driven and innovative conservation.

What is next in Amazonian biogeography research?

Organizers: João Marcos Guimarães Capurro and Gregory Thom

Tuesday, 10 August 2021: 10:00 – 11:30 and 14:00 – 15:30 EDT

Amazonia is the most biodiverse region on the planet, and around 13% of all bird species can be found there. For centuries, the high number of species and intricate patterns of distribution have served as a laboratory for the development of many diversification hypotheses that shaped historical biogeography. However, Amazonian biogeography is changing, catalyzed by the increased availability of environmental data, detailed geological models, and the development of large molecular datasets. We present recent advances in Amazonian biogeography, focusing on new approaches and the application of recently developed tools to understand the patterns of avian diversity and processes that generate them. The symposium highlights the importance of exploring overlooked environments such as floodplains and open vegetation habitats and shows how

genomic tools are being used to establish new hypotheses about the drivers of species formation. Finally, we discuss the current gaps in taxonomic and biogeographic knowledge. Amazonia is facing record high deforestation, pressure from illegal mining, and political negligence. To preserve the future of the forest we need to improve our knowledge about its biodiversity through increased incentives for research in the region and formation of local and international collaboration networks.



Round Table Discussions

Mixed flock: LGBTQIA+ narratives within ornithology

Tuesday, 10 August 2021: 16:00 – 17:00 EDT

What unique barriers and considerations are there for LGBTQIA+ identified ornithologists? We propose a LGBTQIA+ identified panel to discuss their work, experiences, and personal stories and how the intersection of their personal identities influences their career. Featured panelists will briefly share their unique experiences, then cover key discussion points such as how their LGBTQIA+ identity has influenced their relationship with their profession and/or research, how to effectively increase inclusion of diverse narratives within ornithology, and what effective allyship means for underrepresented individuals. Following the formal discussion, the panel will shift to open audience questions and discussion with the panelists for the remaining duration of the roundtable. It is our intention to establish an inclusive and welcoming space to discuss sometimes difficult topics related to personal identity within our profession. A panelist discussion will lead to increased awareness of the work conducted and the issues faced by queer ornithologists, which represent a hidden diversity of the ornithological community. The results from our conversation will be used to inform efforts to increase the inclusion and visibility of LGBTQIA+ ornithologists.

Panelists

- Carly Aulicky, Native Prairies Association of Texas
 - Chad J. Wilhite, University of Hawai'i at Mānoa
 - Scott Anthony Taylor, University of Colorado
 - Kristen Covino, Loyola Marymount University
 - Eric J. Tobin, University of Louisiana at Lafayette
 - Miranda Wilkinson, The Jones Center at Ichauway, Georgia
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Birds of the World: Contribute your expertise!

Tuesday, 10 August 2021: 16:00 – 17:00 EDT

Birds of the World (BOW) is the most comprehensive reference for the life histories of the World's 10,700+ bird species and the web's premiere resource for digital natural history. This roundtable seeks to engage ornithologists to contribute their information and expertise to species accounts. We will demonstrate recent advances of BOW species accounts, including new multimedia capabilities and integration of data products. A discussion will follow the demonstration with topics to include: the process of species account revisions and updates, contributions and authorship, community engagement, and suggestions for future developments.

Panelists

- Brooke Keeney, Cornell Lab of Ornithology
- Paul Rodewald, Cornell Lab of Ornithology
- Shawn Billerman, Cornell Lab of Ornithology
- Laura Kammermeier, Cornell Lab of Ornithology

Drone applications for ornithology

Thursday, 12 August 2021: 16:00 – 17:00 EDT

Ornithologists are relying on an ever-increasing suite of tools to answer questions and solve problems related to avian ecology. The use of unmanned aerial vehicles, or drones, has exploded in popularity in ecological studies in general, and in ornithology in particular. Drones have many advantages over traditional research techniques. They eliminate safety risks associated with fixed-wing and helicopter surveys, reduce cost and disturbance, increase accuracy, and allow the collection of high-resolution data over large or otherwise inaccessible areas. Some of the major areas of application of drones that have emerged in avian ecology include, but are not limited to: 1) population surveys, including breeding colonies and non-breeding aggregations and the use of different types of sensors (e.g. visible, thermal IR); 2) individual nest inspections; 3) radio-tracking surveys involving the use of radio telemetry sensors; (4) acoustic surveys, involving the use of song-recording sensors; 5) avian habitat research and monitoring involving high-resolution 2D and 3D mapping and multi- and hyperspectral imaging; and 6) bird dispersal, either for nuisance birds or to deter birds from hazards. This Roundtable Discussion provides highlights of the use of drones in avian ecology and a forum for discussion among both experts and potential users of drones that may result in future research collaborations between ornithologists in academic, government, and private sectors.

Panelists

- Dr. David Bird, McGill University: Drones Becoming a Popular Tool for Ornithologists
- Rick Spaulding, ManTech International: The Wildlife Society Drone Working Group
- Dr. Susan Ellis-Felege, University of North Dakota: Breeding Waterfowl Responses to Drone Surveys
- Dr. Lindsay Young, Pacific Rim Conservation: Using Thermal-imaging Drones to Survey Cryptic Burrow-nesting Seabirds
- Craig Gibson, The Crow Patrol: Using a Drone to Monitor a Winter Crow Roost
- Dr. Page E. Klug, USDA APHIS WS NWRC: Drones as a Tool for Managing Birds in Conflict with Agriculture
- Dr. Jared Elmore, Mississippi State & USDA: Systematic Map Effort of Using Drones to Monitor Birds
- Dr. Elston Dzus: Conventional vs. Drone-assisted Nest Checks of Bald Eagles in Northern Saskatchewan, Canada

Identifying and overcoming the challenges that hinder avian microbiome research

Wednesday, 11 August 2021: 16:00 – 17:00 EDT

A recent surge in research has demonstrated that the microbiome—the archaeal, bacterial, fungal and viral communities residing on and inside organisms—profoundly influence host health and performance through their impacts on the immune system, digestion, development, and behavior. However, most of these investigations have focused on humans or model organisms. While research into roles that microbes play in the ecology and evolution of their hosts is a rapidly growing area, the importance of gut microbiome in birds is poorly understood. Therefore, we propose a roundtable discussion that brings together researchers that investigate avian host-microbe interactions, with the aim of identifying and addressing the challenges that impede research on the avian microbiome.

Panelists. Speakers in the companion microbiome symposium will be participating in this roundtable:

- Elin Videvall, Postdoc, Brown University

- Bill Karasov, Professor, University of Wisconsin-Madison
 - Kirk Klasing, Professor, University of California Davis
 - Sarah Hird, Assistant Professor, University of Connecticut
 - Marcella Baiz, Postdoc, Pennsylvania State University
 - Felipe Campos-Cerda, Postdoc, Instituto de Ecología-UNAM
 - Jennifer Houtz, PhD Student, Cornell University
 - Brian Trevelline, Postdoc, Cornell Lab of Ornithology
 - Maurine Dietz, Research Associate, University of Groningen
 - Morgan Slevin, PhD Student, Florida Atlantic University
 - Sarah Knutie, Assistant Professor, University of Connecticut
 - Gabrielle Davidson, Postdoc, University of Cambridge
 - Pierce Hutton, PhD Student, Arizona State University
 - Priscilla San Juan, PhD Student, Stanford University
 - Maria Costantini, Postdoc, Smithsonian Institution
 - Kevin Kohl, Assistant Professor, University of Pittsburgh
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Meet the editors

Tuesday, 10 August 2021: 16:00 – 17:00 EDT

Everyone is welcome to this session to meet the Editors-in-Chief, Senior Editors, and Managing Editor for the AOS journals, *Ornithology* and *Ornithological Applications*. This session will be particularly helpful for students and early career professionals. The editors will discuss what they are looking for in submitted manuscripts and how to increase the chances a manuscript will be reviewed favorably. After comments by the editors, the session will be devoted to questions from the audience.

Panelists

- Catherine Lindell, *Ornithological Applications* Editor
 - Scott Sillett, *Ornithology* Editor
 - Mark Penrose, Managing Editor, AOS journals
 - Special Features Editor Kate Huyvaert and Senior Editors Wesley Hochachka, Christy Pruett, and Paul Doherty will also likely be in attendance.
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Professional ethics town hall

Wednesday, 11 August 2021: 16:00 – 17:00 EDT

The professional ethics town hall event is an annual “listening session” on the topics of professional ethics and professional responsibility relevant to ornithologists. All attendees are invited to participate to express their perspectives, discuss emerging topics, and voice their questions, concerns and suggestions about issues relevant to professional ethics. The town hall is organized by the AOS Professional Ethics Committee.

Panelists

- Jeff Brawn - University of Illinois at Urbana-Champaign
 - Jeanne Fair - Los Alamos National Laboratory
 - Katie Dugger - Oregon State University
 - Corey Tarwater - University of Wyoming
 - Rob Fleischer - Smithsonian
 - Kristen Covino - Loyola Marymount University
 - Reed Bowman - Archbold Biological Station
 - Jen Walsh - Cornell University
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What "Open Science" means for publishing now and in the future

Thursday, 12 August 2021: 16:00 – 17:00 EDT

The editors-in-chief and managing editor of the AOS journals *Ornithology* and *Ornithological Applications*, and the publisher from Oxford University Press, will engage with conference attendees in this session. We will explore the implications of the advent of open science for publication of manuscripts, data, code, and other facets of the publishing process like preprint servers. We will discuss the benefits, costs, and potential ways to manage the costs, of open science.

Panelists

- Ayesha Saldanha, Oxford University Press (publisher for AOS journals)
- Catherine Lindell, EIC *Ornithological Applications*
- Scott Sillett, EIC *Ornithology*
- Mark Penrose, Managing Editor of AOS journals



Virtual Poster Session

Virtual Poster Sessions take place on Tuesday and Wednesday evening, 17:30 – 19:00 EDT. During this time, presenters will be available within EventPilot to answer questions. You have two options for engaging with other meeting attendees:

The first option for engagement is through text comments. Meeting attendees will be able to leave comments or questions in EventPilot for poster, and presenters can answer those questions as comments in response. Meeting attendees will be able to leave comments or questions at any time during the conference.

The second option is using the presenter's personal video or audio conference room that attendees can access. Some presenters will put a link to their Zoom or Google Meets Room as a comment to on their poster and indicate when they will be available. We recommend this time to coincide with the poster session.

Annual cycle and breeding biology
Metabolic health and physical development of Barn Swallow (<i>Hirundo rustica</i>) chicks under natural photoperiod and artificial light at night Burgess ML, Cooper CB, Voss MA – PA: Murry Burgess
Do Eastern Bluebirds guard nest boxes during the fall and winter? Rollfinke M, Kipnis F, Stanback M et al. – PA: Maxwell Rollfinke
*Maternal adjustment of offspring sex allocation in Greater Sage-Grouse Smith KL, Tymstra EF, Mathews SR et al. – PA: Katie Smith
Insights into the nest site characteristics of pueo (Hawaiian Short-eared Owl; <i>Asio flammeus sandwichensis</i>) on O‘ahu Wang O, Wilhite CJ, Garcia-Heras MS et al. – PA: Olivia Wang
Assessing Black Tern colony occurrence and habitat associations in the Canadian prairie pothole region using aerial imagery Shephard N, McKellar A, Reudink M – PA: Nicholas Shephard
Behavior
Worth the risk? Female House Wrens (<i>Troglodytes aedon aedon</i>) defend similarly against two simulated nest predators Eggleston CR, Davis KM, Reichard DG – PA: Ross Eggleston
Effects of oil well drilling noise on breeding behavior of Chestnut-collared Longspurs (<i>Calcarius ornatus</i>) Sutcliffe L – PA: Lee Sutcliffe
To mixed flock or not to mixed flock: Foraging ecology of the Brown-headed Nuthatch (<i>Sitta pusilla</i>) McNeill N, Walters JR – PA: Noah McNeill
The effect of moonlight on the diel activity patterns and reproduction of a crepuscular bird Souza-Cole I, Ward MP, Benson TJ – PA: Ian Souza-Cole
A review and guide for describing the vocal behavior in birds Ku-Peralta W, González-Bernal E, Santos-Moreno A et al. – PA: William Ku-Peralta
*Differential community response to threat: Using a novel soundscape approach to understand community signaling changes Marion PT, Gill SA – PA: Parks Marion
Conservation and climate change
The influence of local conditions on the arrival-breeding interval in a long-distance migrant Smith LHN, Fraser KC – PA: Lakesha Smith
*Potential effects of climate and land cover change on forest songbirds of the Appalachian Mountains Clipp HL, Rota CT, Wood PB – PA: Hannah Clipp
Decline of North American avian populations as a function of land use, land cover and migration period Faraco-Hadlock NF, Miller CR, Vitousek MN – PA: Nicholas Faraco-Hadlock
Temporal and spatial patterns of neonicotinoid and butenolide insecticide residues in flowers, hummingbirds and honey bee nectar and honey in the Fraser Valley, BC, Canada (2018, 2019) Bishop CA, Hick KG, Elliott JE et al. – PA: Christine Bishop
*Combining population genomics and demographic modeling to inform conservation of a threatened migratory bird, the Canada Warbler (<i>Cardellina canadensis</i>) Miller CV, Bossu CM, Haché S et al. – PA: Caitlin Miller

Are early successional birds declining because of lack of early successional forests or loss of fire-dependent open forests in the eastern United States? Hanberry BB , Thompson FR – PA: Brice Hanberry
Diseases and parasites
*Effects of a hematophagous ectoparasite on nestling European Starlings (<i>Sturnus vulgaris</i>) Poirier JC , Barber CA – PA: Jessica Poirier
A high prevalence of malaria parasites in Great-tailed Grackles (<i>Quiscalus mexicanus</i>) in Arizona, USA Pacheco MA , Ferreira FC , Logan CJ et al. – PA: M. Andreína Pacheco
*Spatial relationship between avian host communal roosts and West Nile virus infected mosquitos in Maricopa County, Arizona Bol S , Motyka P , Hepp C – PA: Skyler Bol
Ecology
Divergent trophic responses of sympatric penguin species to shared historic environmental change Michelson CI , Polito MJ , McMahon KW – PA: Chantel Michelson
Do nice jays finish last: Diagnosing the causes of undermatching in a synanthropic species Brunk KM , West EH , Pidgeon AM et al. – PA: Kristin Brunk
*Nature versus nurture: Structural equation modeling indicates that parental care does not mitigate consequences of poor environmental conditions Sudnick M , Brodie BS , Williams K – PA: Madeline Sudnick
Avian diversity and foraging behavior in a heterogeneous urban-agroecosystem Bockrath RE , Wood EM , Still DW et al. – PA: Rachel Bockrath
The effects of environmental conditions on eggshell thickness of Western Bluebirds and Ash-throated Flycatchers Romero AT , Bartlow AW , Hathcock CD et al. – PA: Alicia Romero
*Birds' eggshell colors conform to Bogert's rule Cooper SH , Hanley D – PA: Sela Cooper
Occupancy and detection probability for resident tropical birds in a working landscape in Nicaragua McGowan CP – PA: Conor McGowan
Geographic variation in morphology of Northern Cardinals (<i>Cardinalis cardinalis</i>): Possible application of Bergmann's rule? DeVries MS , Waraczynski M , Baldassarre DT et al. – PA: Susan DeVries
Evolution, genomics, and phylogenetics
CANCELLED: Major histocompatibility complex (MHC) variation among boreal breeding passerines that differ in migration distance
Turning induced plasticity into refined adaptations during range expansion Potticary AL , Morrison ES , Badyaev AV – PA: Ahva Potticary
Genetic basis for the population differentiation and local adaptation of White-crowned Sparrow (<i>Zonotrichia leucophrys</i>) to different forest habitats Oguntuase-Osagie BG , Burg TM – PA: Bukola Oguntuase-Osagie
Global patterns of phenotypic macroevolution in parrots Lee E , Merwin JT , Terrill R et al. – PA: Elliot Lee
Geographic variation in vocalizations and morphology of Cactus Wrens (<i>Campylorhynchus brunneicapillus</i>) Andrade-González VM , Vázquez-Miranda H , Sosa-López JR – PA: Violeta Andrade
*Hybridization and speciation of an Amazonian manakin Mikkelsen EK , Weir JT – PA: Else Mikkelsen

Migration genomics of Golden-crowned Kinglets (<i>Regulus satrapa</i>) and Red-breasted Nuthatches (<i>Sitta canadensis</i>) Schramm DJ, Burg TM, Spellman GM et al. – PA: Danika Schramm
Morphology, vocalizations, and mitochondrial DNA suggest that the Graceful Prinia is 2 species Alström P, Rasmussen PC, Xia C et al. – PA: Pamela C. Rasmussen
Migration and stopover
First satellite-tracked migration of an Eurasian Thick-knee (<i>Burhinus oedicephalus</i>) in the Middle East ends in human-caused mortality Kittelberger KD, Buechley ER, Sekercioglu ÇH et al. – PA: Kyle Kittelberger
Use of stopover sites by four raptor species and assessment of their migratory connectivity Pérez-Cadavid A, Ruelas-Inzunza E – PA: Adelaida Pérez Cadavid
Two new records of the Tufted Flycatcher (<i>Mitrephanes phaeocercus</i>) in the coast of Veracruz, Mexico Ciprés-Chávez A, Córdoba-Cuevas EA, Toto-Cobix J – PA: Adrián Ciprés
Avian use of agricultural areas as migration stopover sites: A review of crop management practices and ecological correlates Blount JD et al. – PA: David Blount
Investigating the plasticity of migration timing to environmental variability in a songbird Turcotte-van de Rydt C, Muthukumarana S, Fraser KC – PA: Christophe Turcotte-van de Rydt
Physiological condition of migrating thrushes at a Great Lakes stopover site Bros A, Hoh R, Pagano SS – PA: Alexandra Bros
Models and methods
Inferring successful breeding of a precocial bird with tracking data Duggan M, Wilde LR, Verhoeven MA et al. – PA: Matthew Duggan
Using Unmanned Aircraft Systems (UAS) to monitor endangered California Least Terns Pan JJ, Jaeger A, van Epps T et al. – PA: Jean Pan
An open-source tool for data fusion of GPS tracking and geomagnetic data: A case study of bird migration Iyer A, Benitez-Paez F, Brum-Bastos V et al. – PA: Aranya Iyer
The not-so-Common Eider (<i>Somateria mollissima</i>): Using demographic data synthesis, meta-analysis and matrix population modelling to reveal a mismatch between data availability and needs for seaducks Nicol-Harper A, Doncaster CP, Hilton GM et al. – PA: Alex Nicol-Harper
Song and vocalizations
*Seasonal song variation in Carolina Wrens (<i>Thryothorus ludovicianus</i>) Keating HR, Reichard DG – PA: Holly Keating
Female song is acoustically similar to male song in a temperate species with delayed plumage maturation Moyer MJ, Omland KE, Lohr BS et al. – PA: Michelle Moyer
Evaluation of nocturnal birds using acoustic records in the Chirikyacu native community Alva-Caballero LX, Sanchez-Cabrera VE, Mena-Alvarez JL – PA: Lucía Ximena Alva-Caballero
Testing the acoustic adaptation hypothesis in songs of <i>Artisornis</i> tailorbirds Palmer SM, McEntee JP, Blankenship T et al. – PA: Shelby Palmer

* indicates student presenters eligible for a Student Presentation Award; “PA” indicates Presenting Author

Virtual Poster Session: Wednesday evening, 11 August 2021 17:30 – 19:00 EDT

Annual cycle and breeding biology
Exploring over-wintering avian diversity and parasite prevalence in a private working forest Bracken RD , Greene DU , Miller DA , et al. – PA: Rebecca Bracken
Investigating the genetic mechanisms of bill color plasticity and its environmental drivers across time and space Demery A-JC , Houtz J , Lovette IJ et al. – PA: Amelia-Juliette Demery
Nest success and nest site characterization in Gray Catbirds: How does the prevalence of invasive shrubs impact their nest success and breeding biology? Hollenbush BE , Redmond LJ – PA: Bethany Hollenbush
Factors affecting breeding productivity of Common Nighthawks nesting on south Louisiana beaches Bolinger SM , Johnson EI , Leberg PL – PA: Sarah Bolinger
Nest placement decisions in Grey Fantails (<i>Rhipidura albiscapa</i>) relative to neighboring conspecific nest proximity and stage Sotnychuk NM , Ng JW , and Beckmann C – PA: Nadya Sotnychuk
Behavior
Neither sex appears to benefit from divorce within migratory Northern Flickers consistent with accidental loss and bet-hedging Wiebe KL – PA: Karen Wiebe
Long-term camera trap monitoring of understory birds in the Peruvian Amazon reveals rarely registered behaviors Arana A , Esteves JF et al. – PA: Alejandra Arana
*Sex ratios and the city: Investment in offspring sex ratios and parental care in urban versus rural European Starlings Kilgour D , Pierson T , Carey R et al. – PA: Denyelle Kilgour
Natural behavior in a songbird shows accurate interval timing with no increase in error Rodriguez-Saltos CA , Duque FG , Clarke JA – PA: Carlos Rodriguez-Saltos
Brood parasitism
What can the ejection of foreign objects from Eastern Bluebird nests reveal about selection on bluebirds to eject the parasitic eggs of Brown-headed Cowbirds? Gelman AW , Diamant E , Stanback M – PA: Adam Gelman
Hosts select for the eggshell color of the Brown-headed Cowbird Hanley D , Rutledge S , Moghaddame-Jafari B – PA: Daniel Hanley
Ejection of Brown-headed Cowbird (<i>Molothrus ater</i>) eggs by Eastern Bluebirds (<i>Sialia sialis</i>) influenced by timing of parasitism in relation to bluebird laying Saucier MW , Stanback MT et al. – PA: Maxwell Saucier
Conservation and climate change
Linking climate change to foraging effort in a pagophilic seabird, the Mandt's Black Guillemot Leicester TJ , Elliott KH , Divoky GJ – PA: Thomas Leicester
*Have North American birds been shrinking over time? A test of Bergmann's rule in the context of climate change De Bellis CR , Campbell SP , Beaudry F et al. – PA: Caitlin De Bellis
Habitat characteristics of breeding Black Rails in vulnerable coastal locations Larson M , Butler C – PA: Matthew Larson

Effects of habitat alteration due to logging on migratory songbird abundance in Canadian boreal forest Cupiche VJ, McLaren B – PA: Vianney Cupiche
Prioritizing Midwest regional landscapes to conserve habitats for grassland birds Al-Saffar MA et al. – PA: Mohammed Al-Saffar
Conserving Alberta Greater Sage-Grouse (<i>Centrocercus urophasianus</i>) populations: An assessment of translocation recovery using genetic markers Graham BA, Nicholson J, Klem M et al. – PA: Brendan Graham
Ecology
The effects of variation in temperature and parental behavior on embryonic period length, chick body size and telomere length in House Sparrows (<i>Passer domesticus</i>) Dennis AJ, Young RC, Heidinger BJ et al. – PA: Abigail Dennis
What factors influence the light environment in burrows of Atlantic Puffins? O'Brien N, Bitton P-P – PA: Noah O'Brien
Are ecosystem engineers keystone habitat providers for secondary cavity nesters in temperate forests of South America? Cuatianquiz-Lima C, Altamirano TA, Novoa F et al. – PA: Cecilia Cuatianquiz-Lima
Comparison of breeding bird diversity in urban vs. rural areas in an intensive agricultural landscape in Illinois, USA Bieniak L, Schoenecker R, Harper RG et al. – PA: Leah Bieniak
Monitoreo de aves en dos fincas agrícolas de café y cacao de sombra considerando la distancia entre disturbios antropogénicos y bosques naturales León Morales G – PA: Gabriel León Morales
Are House Wrens responsible for the decline of Bewick's Wrens? Using models to assess the impacts of interspecific competition over space and time Vickers ZH, McEntee JP – PA: Zach Vickers
Did the Flint Water Crisis impact urban wildlife? A look at bird blood lead levels Zahor DL, Glynn KJ, Cornelius JM – PA: Dorothy Zahor
Evolution, genomics, and phylogenetics
3D morphometrics on shorebird skulls suggest semi-independent evolution of beak and braincase Xu X, Natale R – PA: Xiaoni Xu
*Tail shape classification of <i>Tyrannus</i> species based on geometric morphometrics Fasanelli MN, Milla Carmona PS, Tuero DT et al. – PA: Martin Fasanelli
Recent history the Ecuadorian Hillstar: An example of divergence with gene flow? Bonaccorso E, Rodríguez-Saltos CA, Freile JF et al. – PA: Elisa Bonaccorso
Assessing changes in population size through time in California Gnatcatcher Martínez-Avila C, Vázquez Miranda H – PA: Camila Martínez-Avila
*Genomic differentiation between three subspecies of Orange-crowned Warblers Fogarty F, Askelson K, Irwin D et al. – PA: Finola Fogarty
High-efficiency genomic typing of historic oriole specimens Vila-Coury V, Billerman SM, Walsh J et al. – PA: Vicens Vila-Coury
A draft avian tree of life Ahmad MR, OpenWings Consortium, Thom G – PA: Gregory Thom

A resolved phylogeny of Cardinalidae based on ultraconserved elements Scott BF, Burns KJ – PA: Benjamin Scott
Migration and stopover
Distribution and abundance of Neotropical migrant swallows in Western Cuba during the winter period 2020-2021 Rodríguez-Ochoa A, Ventura del Puerto D, Mugica Valdés L et al. – PA: Alejandro Rodríguez-Ochoa
Nest box occupancy by four local species prior to anthropogenic modification Harris JA, Hope RJ, Drumtra DE – PA: Jordan Harris
*Phenology shift of Purple Martin roosting behaviors in the Great Lakes region Deng Y, Belotti MCTD, Horton K et al. – PA: Yuting Deng
*Long-term analysis of the spatial distribution and habitat associations of Purple Martin (<i>Progne subis</i>) and Tree Swallow (<i>Tachycineta bicolor</i>) roosts in the US Great Lakes Belotti MCTD, Deng Y, Horton KG et al. – PA: Maria Carolina Tiburcio Dias Belotti
Assessing breeding origin and migratory pathways in a declining aerial insectivore (Tree Swallow) Gingras RM, Taylor AR, Causey D – PA: Rachel Gingras
Nutrition of non-native fruits for migratory songbirds in the Northeastern U.S. Loi C, Kwasinski V, Rosete J et al. – PA: Cynthia Loi
Models and methods
*Testing the utility of condition indices in nestling swallows: A quantitative magnetic resonance (QMR) approach Beauchamp AT, Kusack JW, Hobson KA et al. – PA: Andrew Beauchamp
Linking species distribution models to landscape simulation scenarios and conservation planning approaches to support the identification of critical habitat for Species At Risk: Wood Thrush (<i>Hylocichla mustelina</i>) Leston L, St. Laurent K, Weeber R et al. – PA: Lionel Leston
Use of Data Mule UAS to remotely download camera trap data to support bird species monitoring on military lands Pan JJ, Delaney DA, Mountcastle Z et al. – PA: Jean Pan
Molt and plumage
Physiological condition during molt differs between songbirds with contrasting molt strategies Butler LK, Hope SF, Stabile FA et al. – PA: Luke Butler
Song and vocalizations
Characterization of Hermit Thrush (<i>Catharus guttatus</i>) song overlapping during simulated territorial intrusions and natural countersinging Demerchant K, Jessulat J, Roach SP – PA: Kendra DeMerchant
Relating song to morphology, ecology, and phylogeny in the genus <i>Vireo</i> Schaefer LN, Cicero C, Benham PM et al. – PA: Linnea Schaefer
Sources of geographic variation in songs within the genus <i>Patagioenas</i> , and an assessment of reproductive character displacement between two closely related species Zapata D – PA: Dan Zapata
Variation in two types of <i>Setophaga townsendi</i> song and a test of association with mtDNA phylogeography Ore MJ, Wang S, Irwin DE – PA: Madelyn Ore

* indicates student presenters eligible for a Student Presentation Award; “PA” indicates Presenting Author



Networking Events

The AOS & SCO-SOC 2021 virtual meeting has several exciting networking events, wholeheartedly planned to meet the needs of ornithologists from diverse backgrounds and career stages! The two types of networking sessions taking place during our meeting are:

Chirp & Chirp! – 30-minute informal networking sessions happening in Zoom, Monday through Friday, 1:30–2:00 p.m. EDT.

Networking Panels – Happening in Zoom, these are moderated networking panels where students, postdocs and professionals chat about their experiences as ornithologists in secondary education, graduate school and academia. Sessions take place Monday through Thursday, 4:00–5:00 p.m. EDT.

Special Networking Sessions – A diverse selection of networking events taking place in zoom, Monday through Thursday, 4:00–5:00 p.m. EDT.

All networking events are held in Zoom. Enter via the Zoom link in EventPilot. Read below for more information about scheduled networking opportunities.

Chirp & Chirp!

1:30–2:00 p.m. EDT, Monday through Friday

In these 30-minute informal networking sessions, join one of our daily themed Zoom breakout rooms or form a new room on the topic of your choice! We are offering moderated Zoom breakout rooms in which moderators enact the Code of Conduct and report incidents to the Safe Meeting Committee. You are also welcome to start your own non-moderated breakout room on a topic of your choice and invite others via the Chirp & Chirp! channel in Slack. If interested in doing this, please let us know the name of your room via the Chirp & Chirp! Slack channel by 11:30 a.m. EDT each day so that we can set it up before you enter.

Below is the schedule and descriptions of the moderated Zoom breakout rooms:

Coffee Break – 1:30–2:00 p.m. EDT, Tuesday, 10 August and Thursday, 12 August – Grab coffee, tea, or a snack and join us for conversations among new and old friends and colleagues!

BIPoC ornithologists – 1:30–2:00 p.m. EDT, Monday, 9 August and Wednesday, 11 August – A safe space for Black, Indigenous and People of Colour to connect, network, chat about research, and professional ornithology. This is a BIPoC only space.

LGBTQIA+ ornithologists – 1:30–2:00 p.m. EDT, Tuesday, 10 August and Thursday, 12 August – A safe space for LGBTQIA+ people to connect, network, chat about research, and professional ornithology. This is an LGBTQIA+ space.

Disability friendly chat – 1:30–2:00 p.m. EDT, Monday, 09 August – A safe space to chat about access challenges in birding and ornithology. Moderated by Freya McGregor, Birdability coordinator.

Pets welcomed! – 1:30–2:00 p.m. EDT, Wednesday, 11 August – Bring along your favorite furred, feathered, or scaled friend to a space where background noise and screen disruptions will be encouraged!

Kid friendly chat – 1:30–2:00 p.m. EDT, Friday, 13 August – A space for parents and their future ornithologists to hang out together.

Networking Panels

4:00 – 5:00 p.m. EDT, Monday through Thursday

Pre-college Networking Series

High school and/or pre-college students interested in attending college, becoming more involved with ornithological societies, or interested in birds in general are invited to attend a series of informal discussions with current undergraduate and graduate students. The first day will focus on what resources AOS and SCO-SOC offer for pre-college students and how you can become involved with one of the society's Student Affairs Committees. The second day offers a space for pre-college students to come and ask current undergraduate and graduate students what to look for when considering which college to attend or what major to choose. The third and fourth days will offer casual conversation spaces for pre-college students to network with each other and discuss conference events.

Day 1: AOS & SCO-SOC Welcome for Students

Monday, 9 August, 4:00 – 5:00 p.m. EDT

Welcome to AOS & SCO-SOC virtual meeting/how to get involved with AOS and SCO-SOC/AOS Student Affairs Committee/resources available for pre-college students (travel funding, networking and professional development events, etc).

Moderated by AOS Student Affairs Committee Co-Chairs

Day 2: How to Choose a College and/or Major panel

Tuesday, 10 August, 4:00 – 5:00 p.m. EDT

What to look for when considering colleges/majors. Topics include: What was the determining factor for you when choosing a college and major? Did you consider location when choosing a college? Did you do research in undergrad? If so, how and when did you get involved with research?

Moderator: Brittany Panos (@birdsandbri, Co-chair, AOS Student Affairs Committee)

Panelists: Tram Nyugen (@Tram_N_Nguyen, PhD Student, Cornell University), Karen Ong (@kyko1120, M.Sc. Student, University of Guelph), Jenny Uehling (@juehlz, PhD Student, Cornell University)

Day 3: Casual conversation space with fellow pre-college/high school students

Wednesday, 11 August, 4:00 – 5:00 p.m. EDT

Day 4: Casual conversation space with fellow pre-college/high school students

Thursday, 12 August, 4:00 – 5:00 p.m. EDT

Prospective Graduate Student Networking Series

Anyone (undergraduate or post-bachelor's degree) who is interested in attending graduate school is invited to attend a series of informal discussions with current graduate students about the graduate school application process, a day in the life as a graduate student researcher, and more! The first day will focus on what resources AOS and SCO-SOC offer for prospective and current graduate students and how you can become involved with the Societies. The second day offers a panel discussion with current Master's and PhD students where participants can ask questions about how to choose a graduate program, what the day to day responsibilities are of a graduate student, stipends, graduate student life, and more! The third day will focus on strategies for identifying and contacting potential graduate advisors. The fourth day will offer a casual conversation space for prospective graduate students to network with each other and current graduate students.

Day 1: AOS & SCO-SOC Welcome for Students

Monday, 9 August, 4:00–5:00 p.m. EDT

Welcome to AOS & SCO-SOC virtual meeting/how to get involved with AOS and SCO-SOC/ AOS Student Affairs Committee/resources available for prospective and current graduate students (research/travel funding, networking and professional development events, etc).

Moderated by AOS Student Affairs Committee Co-Chairs

Day 2: “Grad School 101” Panel**Tuesday, 10 August, 4:00–5:00 p.m. EDT**

A panel of current grad students (master’s and PhD, different universities). Topics include: Tips for applying to graduate school, how to know if you should take a gap year and what kind of ornithological jobs you can do before graduate school, how to maintain a work-life balance in graduate school, etc.

Moderator: Jenn Houtz (@JennHoutz, co-chair, AOS Student Affairs Committee)

Panelists: Jenny Bouchenot (@JennyBouchenot, M.S. Student, University of Central Florida), Allyson Kristan (PhD Student, Louisiana State University), Oona Takano (PhD Student, University of New Mexico), Alexis Earl (@AlexisDianaEarl, PhD Student, Columbia University)

Day 3: “How to Contact a Prospective Advisor” Panel**Wednesday, 11 August, 4:00–5:00 p.m. EDT**

Current graduate students will present strategies and give advice for how to reach out to prospective graduate advisors. Topics include: What was the determining factor for you when choosing your advisor? How many prospective advisors did you reach out to and when? What details did you include in your initial inquiry email? What do you do if the prospective advisor doesn’t email you back?

Moderator: Jenn Houtz (@JennHoutz, co-chair, AOS Student Affairs Committee)

Panelists: Kristin Brunk (@Brunkosaurus1, PhD Student, University of Wisconsin-Madison), Adrian Ciprés Chávez (PhD Student, Universidad Veracruzana), Amanda Navine (M.S. Student, University of Hawai’i at Hilo), Nicole Moody (@nmoody313, PhD Student, Brown University)

Day 4: Casual conversation space with fellow undergraduate and prospective graduate students**Thursday, 12 August, 4:00–5:00 p.m. EDT****Postdocs in Ornithology Networking Panel****Wednesday, 11 August, 4:00–5:00 p.m. EDT**

Graduate students who are interested in pursuing careers in academia, please join us for an informal panel discussion on how to apply for postdoc positions. In the first half of the session, our panelists will discuss their postdoc journeys, including searching for postdocs and what to expect in a postdoc position. During the second half of the session, participants will be able to join in an extended Q&A with the panelists. Some conversation topics will include: How did you get a postdoc position? What are some things you didn’t know about being a postdoc that you wished you had known? How did you find your postdoc advisor?

Moderator: Erin Morrison (Clinical Assistant Professor, New York University)

Panelists: Ana González (Postdoctoral Researcher, Environment and Climate Change Canada), Gavin Leighton (Assistant Professor, SUNY Buffalo State), Naima Starkloff (Postdoctoral Researcher, Emory University), and Daniel Yip (Postdoctoral Fellow, Wildlife Conservation Society Canada)

Special Networking Sessions

4:00–5:00 p.m. EDT, Monday through Thursday

Chat Roulette

Monday, 9 August, 4:00–5:00 p.m. EDT

Organizer: Erin Morrison

Spend an hour ‘randomly assorting’ into small breakout rooms with new and old friends informally discussing fun prompts within and outside of ornithology. Participants will be randomly assigned to breakout rooms every 10 minutes to discuss a new question with a new group of colleagues.

Early Professional Networking

Monday, 9 August, 4:00–5:00 p.m. EDT

Organizers: Early Professionals Committee

Early Professionals should swing by for a low-key, low stakes social event where you get to find out a bit more about your colleagues. Grab your favorite beverage to check in on old friends and make some new ones. You’ll find out about some of the greatest mysteries solved, the most embarrassing field situations, and greatest achievements in early professional history.

BirdsCaribbean Meet and Greet

Tuesday, 10 August, 4:00–5:00 p.m. EDT

Organizers: Adrienne Tossas & Lisa Sorenson

Meet BirdsCaribbean! Bring your favorite beverage (mojitos anyone?) and come hang out with a group dedicated to studying and protecting Caribbean birds and their habitats! During this informal chat and social hour, we want to connect folks from our Caribbean community with other active members of the broader bird world. We’ll have some ice breakers and a fun Caribbean bird trivia quiz (with prizes!). Who knows—maybe you’ll meet a future collaborator, or at the very least we promise you’ll make some new friends!

North American Banding Council Meet and Greet

Wednesday, 11 August, 4:00–5:00 p.m. EDT

Organizer: Ian Ausprey

The North American Banding Council’s mission is to promote sound and ethical bird banding principles and techniques. It achieves its mission by working with the scientific ornithological societies, the USGS Bird Banding Lab, and the Canada Banding Office to provide training materials and professional certification opportunities for biologists using mist nets and mark-recapture techniques as part of their research and monitoring programs. Members of NABC will be on hand to answer questions regarding bird banding as a tool for studying bird populations and to provide information about NABC training materials and professional certification opportunities.

Bird Friendly Coffee Hour

Thursday, 12 August, 4:00–5:00 p.m. EDT

Organizers: Justine Bowe and Ruth Bennett, Smithsonian Migratory Bird Center

Join the Smithsonian’s Bird Friendly® Coffee Program for a Coffee Happy Hour: Learn how to taste and grade coffee like an expert, ask Latin American ornithologists how coffee supports birds, and

test your knowledge in a trivia round for a chance to win a free bag of Bird Friendly coffee! Win or no, you can find your perfect bag of Bird Friendly coffee at s.si.edu/BuyBF.

BirdsCaribbean General Business Meeting

Thursday, 12 August, 4:00–5:00 p.m. EDT

During this meeting, our Working Groups (for example, Seabirds, Waterbirds, Media, Monitoring, among others) will give exciting updates on what they've been up to and what they've accomplished during the last two years. We will also be talking about the progress of current projects in the Caribbean, as well as some exciting new developments on the horizon. Members and all others are welcome and encouraged to attend.

Sponsor Presentations

4:00–5:00 p.m. EDT, Tuesday through Thursday

Lotek Wireless Inc.

Tuesday, 10 August, 4:00–4:30 p.m. EDT

Our innovative and internationally recognized satellite, radio, acoustic, and archival monitoring solutions allow researchers to track animals of almost any size, in almost any environment. Whether an animal moves through a terrestrial, freshwater, marine or avian habitat, Lotek has a system to track it. Join Mike and the team - we'll be here to answer questions, share stories and tell you about our new upcoming products. We'd love to hear about your projects and we'll help you find the optimal tracking solutions for your research needs.

Waterford Press

Tuesday, 10 August, 4:30–5:00 p.m. EDT

Wildlife Acoustics

Tuesday, 10 August, 4:30–5:00 p.m. EDT

Meet the Micro! Sound analysis is a valuable tool for biologists, environmental scientists and managers for surveying and monitoring bird populations. Record vocal activity to study how birds communicate with one another and are impacted by other elements in an environment, ultimately determining larger behavioral trends. By recording bird vocalizations in an environment, you can gain baseline benchmarks, detect variations over time or between management units, and monitor the presence of species in different areas. This can drive effective conservation strategies, such as preserving land actively used by a specific species. Come meet the new member of the Song Meter family of unattended wildlife audio recorders, the Song Meter Micro. Small enough to fit in your pocket, the Micro is affordable for any budget.

National Audubon Society

Wednesday, 11 August, 4:00–4:30 p.m. EDT

A brief introduction to Audubon and lightning talks about current research and publications. Also provided will be a short overview about careers at Audubon and a Q&A session.

Avinet Research Supplies

Wednesday, 11 August, 4:30-5:00 p.m. EDT

Overview of Avinet Research Supplies products, including: (1) Mist net information and selection, (2) A review of banding pliers, (3) Discussion of researcher needs (Q&A).

Titley Scientific

Wednesday, 11 August, 5:00 - 5:30 p.m. EDT

This session will explore the use of acoustic recorders for bird surveys, including some tips on deployment, and the latest technology. Meet Titley Scientific and learn about the Chorus - our robust acoustic recorder designed specifically for field surveys. Learn more about the Titley Scientific and the Chorus here: https://www.youtube.com/watch?v=ZdX7_Wqgnnk, https://www.youtube.com/watch?v=oNXfEp_Zaxk, <https://www.titley-scientific.com/chorus.html>

FLAP Canada

Thursday, 12 August, 4:00-4:30 p.m. EDT

Since 1993, Fatal Light Awareness Program (FLAP) Canada has worked tirelessly to protect birds from a deadly leading threat: collisions with buildings. Up to a billion birds perish each year in the United States alone after hitting windows. We can prevent these deaths. Join FLAP Canada to learn about the ways that you can join the bird-safe building movement and get involved in bird conservation, right on campus!

ZEISS

Thursday, 12 August, 4:30-5:00 p.m. EDT

ZEISS will provide a brief overview on selecting optics for birding and nature use.



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Workshops and Training Opportunities

All workshops and training opportunities will take place 2–6 August 2021 — the week preceding the AOS & SCO-SOC 2021 Virtual Meeting.

eBird Status: Working with modeled products in R

2 August 2021; 1:00–2:15 p.m. EDT; 3 August 2021; 1:00–1:45 p.m. EDT

Fee: \$0

Maximum Number of Participants: 250

Presenters: Tom Auer, Cornell Lab of Ornithology; Matt Strimas-Mackey, Cornell Lab of Ornithology

The citizen science project eBird has generated a database of almost 1 billion bird observations, with broad spatial and taxonomic coverage. The eBird Status and Trends project uses full-annual cycle machine-learning models with these eBird data and remote-sensing data to account for variation in observer behavior and effort to produce value-added high resolution, weekly estimates of range boundaries, occurrence rate, and relative abundance. In December 2020, the Cornell Lab of Ornithology released visualizations for over 800 species, including over 100 species outside of the Western Hemisphere. In July 2020, the data behind these products will be made publicly available along with the updated ‘ebirdst’ R package developed specifically for analyzing this data.

This workshop will introduce attendees to the modeling process behind the generation of eBird Status products, the where and how of accessing the data, and a demonstration of how to analyze the modeled products using the ‘ebirdst’ R package. There will be two portions: a) a 1.25 hour Zoom webinar on the first day, consisting of a one-hour lecture and a 15-minute Q&A period for conceptual questions; and b) a 45-minute Q&A Zoom session on the second day for software-related questions and troubleshooting.

Introduction to statistical inference with count data in R

5–6 August 2021; 1:00–4:00 p.m. EDT

Fee: \$10 Professional/\$5 Student (region-dependent discounts available)

Maximum Number of Participants: 50

Presenters: Evan Adams, Biodiversity Research Institute; Beth Ross, U.S. Fish and Wildlife Service, Science Applications

Understanding how to think about and analyze count data is a core skill for ornithologists and ecologists. Bird surveys are a common producer of count data. These data are used to conduct species status assessments, build population models, track population trends, and understand spatial variation in density, among many other applications. But count data can be challenging to analyze, and there can be many skills to learn before ecologists effectively use count data to test hypotheses. In this workshop, we propose to show participants how to generate count data then use it to make inferences with linear models, spatial models, and hierarchical models. Participants will learn how to make statistical inferences in R by building statistical models, evaluating model fit, determining parameter performance, and reporting results from a wide

range of count-based modeling approaches. The goal of the course is to provide statistical guidance and extensive R code to the participants so they can apply these examples to their work.

This workshop's target audience is ecologists familiar with R and data analysis but inexperienced with using R to analyze count data effectively and learn new statistical techniques. All course materials will be available on GitHub for access before and after the workshop.

Joint species distribution models: an introduction to the Bayesian Hierarchical Modeling of Species Communities (HMSC) package in R

2–3 August 2021; 11:00 a.m.–1:00 p.m. EDT; 2:00–4:00 p.m. EDT

Fee: \$10 Professional/\$5 Student (region-dependent discounts available)

Maximum Number of Participants: 15

Presenters: Ryan C. Burner, Norwegian University of Life Sciences; Luke L. Powell, CiBio

Joint species distribution models (JSDMs) are a powerful way to use trait and phylogenetic information to better estimate species' response to the environment. They can also be used to estimate species associations, giving insights into community ecology and improving model predictions. The Hierarchical Modeling of Species Communities (HMSC) package in R does this in a spatially explicit and Bayesian hierarchical framework, allowing for statistically sound analyses of data from diverse study designs. After a brief lecture to learn the theoretical basis behind JSDMs (along with a brief introduction to Bayesian methods), participants will start simulating data to analyze and make predictions, becoming comfortable with the workings of the HMSC package. We will then discuss some creative ways the HMSC framework has been used to answer different questions. Finally, participants will have the opportunity to build their own models to explore some real data (or their own). We will do this through a combination of group sessions and smaller breakout rooms where participants can help each other and get more personal feedback from the instructors. For those who want to bring their own data, we will send out some formatting instructions and trial code prior to the workshop, and we will be available to answer formatting questions by email.

This workshop will be suitable for anyone from early-career ecologists to more experienced folks who would like to learn about a versatile and relatively new set of methods. We will provide example code for all exercises, but participants should have at least a basic ability to run code in R. JSDMs are most useful for those working with datasets that include multiple species.

Taking flight: A workshop for ornithologists exploring careers outside academia

4 August 2021; 2:00 –4:00 p.m. EDT

Fee: \$10 Professional/\$5 Student (region-dependent discounts available)

Maximum Number of Participants: 150

Presenters: Danielle Ethier, Birds Canada; Jennifer Houtz, Cornell University; Colleen Miller, Cornell University; Evan Adams, Biodiversity Research Institute; Ellen Jamieson, High School Educator; Jen Walsh, Cornell University; Nandadevi Cortes, Ithaca College – Smithsonian Institution; Nick Mason, Louisiana State University

A large percentage of ornithologists will work outside of academia, but many are not exposed to the range of jobs available during their education, nor are they prepared to successfully apply to

such positions. This workshop will create a forum where attendees can solicit advice on pressing topics relevant to their early-career stage. Our workshop focuses on exposing participants to a diverse range of professional opportunities outside of academia, by pairing early career professionals with a diverse panel of mentors from the following career types: research, education/outreach, communications, policy/advocacy, and resource management.

Using interactive breakout sessions, we hope to facilitate discussions on professional development topics that may be less transparent to early-career members looking at opportunities outside academics. Specifically, by the end of this workshop, participants will:

1. Have a broader understanding of career paths available outside academia.
2. Understand what different job titles really mean, and what to expect on a day-to-day basis.
3. Identify their transferable skills and how they benefit different job sectors.
4. Develop an understanding of how to market their skills during the job application process (e.g., resume writing, job interviews).

Each breakout group will build a mock resume with the panelists, which will help participants identify their transferable skills needed for various career types in ornithology. Discussion of different components of the document will also demonstrate the relative importance of different skills and experiences. The organizing committee will synthesize these into a single reference document to be shared with all workshop participants. Translations will also be made available upon request.

Understanding molt and ageing of passerines using the Howell-Humphrey Parkes and the Wolfe-Ryder-Pyle systems

4 August 2021; 11:00 a.m.–1:00 p.m. EDT

Fee: \$10 Professional/\$5 Student (region-dependent discounts available)

Maximum Number of Participants: 50

Presenters: Andrea Patterson, Braddock Bay Bird Observatory; Emily Patterson, University of New Hampshire; Sarah Harper Díaz, Sullivan's Island Bird Banding Station

We will begin by reviewing molts and molt strategies followed by a discussion of the traditional calendar-based Howell-Humphrey-Parkes (HHP) ageing and molt classification system. We will then introduce the cycle-based Wolfe-Ryder-Pyle (WRP) system and compare it to the HHP system. Participants will learn about typical patterns of feather replacement in the pre-formative and pre-basic molts, and about consistent patterns of feather replacement within families and genera. Using a combination of whole-group and small-group hands-on work, students will put these principles into action as they practice locating, documenting, and interpreting molt limits using carefully curated photo arrays.

Customized BBS trends, trajectories, graphs, and maps using the bbsBayes R package

6 August 2021; 11:00 a.m.–1:00 p.m. EDT

Fee: \$10 Professional/\$5 Student (region-dependent discounts available)

Maximum Number of Participants: 50

Presenters: Brandon Edwards, Carleton University; Adam C. Smith, Environment and Climate Change Canada

This is a 2-hour introductory workshop/demonstration of the R package `bbsBayes`. This package allows anyone to apply the hierarchical Bayesian models used to estimate status and trends from the North American Breeding Bird Survey. The package also lets the user generate a suite of alternative metrics using the existing model output from the annual CWS analyses.

Participants will be supplied with the necessary materials to follow along with the live coding, getting hands-on experience manipulating model output from the 2019 CWS analysis.

A full outline will come closer to the date, but the participants will learn how to: 1) download the raw data (including raw data from previous years); 2) stratify the raw data according to stratification methods used by the CWS and choose which species to model; 3) choose from a suite of pre-written hierarchical Bayesian models and run that model (we will not cover formal model-selection, just explore the different model-options); 4) estimate trends for any time period (1970–2019, 2005–2015, 1980–2000, etc.) and graph population trajectories; 5) generate heat maps of population trends; 6) create geofaceted trajectory plots; and 7) estimate trends for customized regions (e.g., all of the eastern Boreal, Great Plains versus eastern populations of grassland birds).



Birding Competition with eBird and Birdability

Birding Competition sponsored by eBird & facilitated by Birdability

This “competition” is open to everybody, and to join you just need to get out birding during the conference (9–13 August 2021). Participants may enter either or both drawings for a chance to win merchandise from the conference and eBird! To participate, do one or both of the following by noon EDT on 13 August:

- Submit three (or more) qualifying eBird checklists. For an additional entry, also submit one Birdability Site Review to the Birdability Map.

OR

- Tweet about inclusion, equity and access in birding and the outdoors using “@Birdability at #2021AOS_SCO”

The drawing will happen just prior to the closing event, so make sure that your checklists, site reviews, or Tweets are submitted by noon EDT on 13 August.

Submit three or more checklists to be entered once into the drawing; those who also submit a Birdability Site Review will receive an additional entry.

Those who Tweet about their birding experience will be entered into a separate drawing. No need to be present to win, but you will want to be at the closing event because it will be a lot of fun! Check out the rules of the competition below before you start.

How to enter the eBird and Birdability Map drawing:

1. If you don't already have an eBird account, go to [eBird](#) and sign up. You might also want to go to the appropriate store for your phone/device and download the eBird app so that you can enter your list in the field as you bird.
2. During the conference go out birding at least three times. Submit a complete eBird checklist for each time out. Report all species you could identify by sight or sound and include counts for each species. For a checklist to qualify, it must be [complete](#), and must have counts for all species (no X's). And feel free to add media to your checklists!
3. IMPORTANT: Each list needs to be shared with user “AOS-SCO” as well as anybody else in your birding party (this is how we keep track of the lists submitted for this competition).
4. Everybody who has their name on three or more submitted checklists will be entered into the drawing for the final prizes – merchandise from the conference and eBird!

Contribute to the Birdability Map for an additional entry:

You can increase your odds of winning by also submitting one Birdability Site Review (i.e., for one of the sites where you went birding) to the Birdability Map before Friday, 13 August, as long as it is a reasonably accessible birding location.

- To learn more about how to do this, visit [Contribute to the Birdability Map](#) on the Birdability website.
- Before you click “Submit”, add AOS_SOC2021 into the Event code box at the end of the Site Review. It isn't possible to edit a submitted Site Review, so don't forget to do this step.
- Once you have clicked “Submit” for your Birdability Site Review, return to the Birdability Map and refresh your browser; it will update immediately to show your submitted Birdability Site Review.
- Zoom in to your birding location, click the yellow diamond, then click “Share this location”. This will open a new window.
- Copy and paste the url into the checklist comments section on the appropriate eBird checklist.
- (If you submitted your eBird checklist before submitting the Birdability Site Review, you can go back and edit that eBird checklist to add the link to your Birdability Site Review.)
- To see all the site reviews contributed during the virtual meeting, check out this [event-specific map](#)!
-

How to enter the Twitter drawing:

1. Share your birding experience on Twitter including the phrase “@Birdability at #2021AOS_SCO”. Your Tweet must include a reflection/comment/observation on inclusion, equity and access in birding and the outdoors. Below are some ideas to inspire you:
 - Tweet a photo of a birding location you submitted to the Birdability Map. What made this location accessible/not accessible?
 - What access considerations impact your ability to go birding?
 - Share something you learned about birding with an access challenge from the Birdability plenary, or observed during your bird outing.
 - Share ideas to be a welcoming and inclusive birder.
2. Share a link to your Tweet in the #birdability channel on the [meeting Slack workspace](#): this is how we keep track of the lists submitted for this competition. Each Tweet counts as one entry. Threads count as a single entry.

Enjoy your birding! Thank you also for contributing to the Birdability Map to help it become an even more helpful resource for birders and nature lovers with disabilities and other health concerns. To learn more about Birdability, access their free resources, and support their work, visit birdability.org.



Fun Run

Need some inspiration to move? Eyes sore from too much Zooming? Get out and run! The All-out Ostrich Scramble has long been an annual tradition at AOS conferences. This relaxing activity has been a fun way to meet fellow runners, shake-off conference lethargy, and strengthen connections within the AOS community.

Please consider supporting this year’s meeting by participating in a virtual fun run. As you might imagine, things will be different this year: no sign-ups, no ostrich egg prizes...but still a great opportunity to support the community. To participate, conduct your run, as short or as long as you please, during the week of the conference. Just take a picture—of yourself, of your dog, of your favorite overlook, of whatever you want—and upload it to the #m_fun_run channel on the AOS-SCO 2021 Slack group.

We’ll include your images during the conference as a way to help people from around the globe connect through shared loves of birding and running. Your participation helps maintain this fun tradition while supporting the conference proceedings from afar. Go run!



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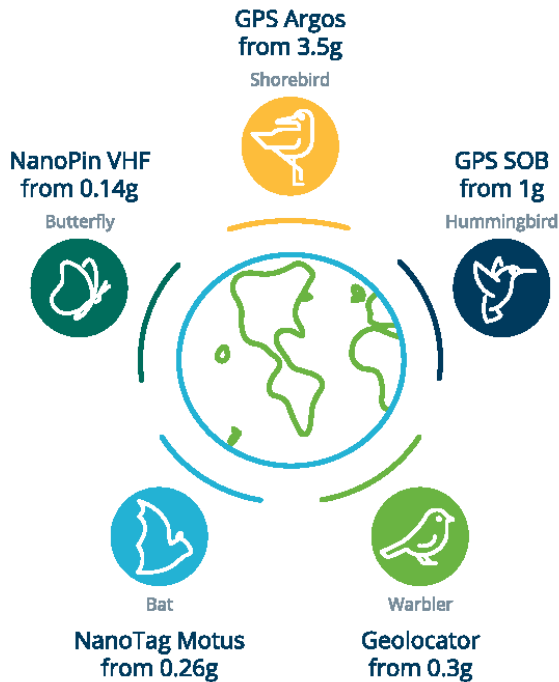


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Northern Parula. Photo: Ray Hennessy

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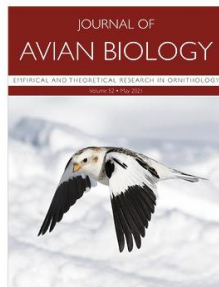
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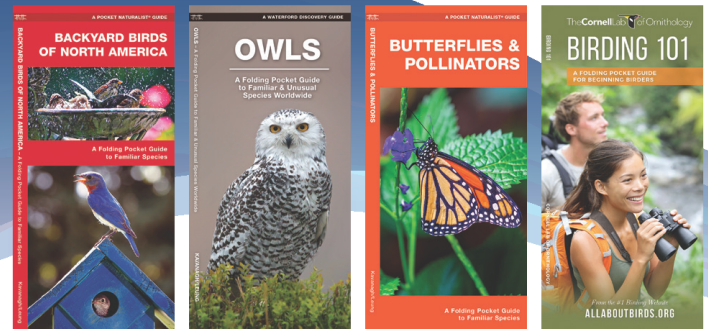
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