

# **PROGRAM**

## **The Third Annual**



**Vision 2020: The Science  
of Things to Come  
March 6<sup>th</sup>-8<sup>th</sup> 2020**



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**WANT TO DOWNLOAD OUR FESTIVAL APP? GREAT!!  
SEARCH FOR OUR ATTENDIFY APP, OR USE YOUR  
SMARTPHONE TO SCAN THE QR CODE BELOW:**



**After you download the app, use the search feature to find our schedule:  
DAHLONEGA SCI & LIT FESTIVALS**



# Welcome!

We are so glad that you are with us this weekend to celebrate our Third Annual Dahlonega Science Festival, **Vision 2020**! The Dahlonega Science Council is committed to bringing science education opportunities to the public through our monthly Science Café events and through this annual Science Festival. Your attendance and support allow us to continue these endeavors; thank you!

This year we are once again partnering with the Dahlonega Literary Festival and we are very thankful for their help in planning the festival events. By working together, we are able to provide more opportunities for engagement with the community and both festivals are strengthened. We encourage our attendees to look at the program for the Literary Festival as well that are found throughout town and [online](#).

This year, we're looking towards the future with 2020 vision (since it is 2020, after all) and, as such, the theme for this year's Science Festival is **“The Science of Things to Come”**. We are very excited about the scientific innovations that are just around the corner!!

If you have any questions, stop by the Naturally Georgia Tasting Room on the Dahlonega Downtown Square. Volunteers will be on duty all day on Saturday to answer your questions. If you'd like to give us some feedback on your time at the festival, then please be sure to take our survey linked into our festival app and help us build a bigger, better festival in the coming years.

Information for this festival, our council, and the monthly Science Café meetings can be found on [Facebook](#) and [Twitter](#) @NorthGAScience and on the web at [www.dahlongescience.org](http://www.dahlongescience.org) so be sure to check us out and come out to support our science events!

Thank you, again, for supporting science in Dahlonega!

-The Dahlonega Science Council

# Dahlonge Science Council



## Board of Directors:

Remola Bernard

Emily Carr

Nancy Dalman

Ed Erickson

Megan Foley

Donna Gessell

Greta Giles

Donna Governor

John Indergaard

Sonny Mantry

Abby Meyer

Winnie Namatovu

Ali Nelson

Kevin Nelson

Jack Rogers

Lesley Simanton-Coogan

Allison Smith

Mark Spraker

Alex Tremblay

Kelli York

*Planning and executing this festival has been a group effort; however, the council would like to extend a special thanks to Dr. Donna Governor, our fearless leader, for everything she has done and continues to do to bring science education opportunities to the Dahlonge community.*

# Festival Sponsors

*The Dahlonega Science Festival is proud to recognize our Leadership Council for this event. These organizations and individuals have helped by contributing significantly to the funding of this year's festival. Thank you for supporting the Dahlonega Science Festival!*

## Lumpkin Coalition

### So The Hemlocks May Live

The Lumpkin Coalition is a 100% volunteer non-profit 501(c)3 charitable organization formed to facilitate projects that benefit North Georgia, Lumpkin County, its residents and visitors. We are dedicated to preserving quality of life for all those who share it. To this end, we support the preservation of a clean and healthy environment, responsible living, and responsible growth.

## Northside Hospital Forsyth

Northside Hospital Forsyth continues to expand and add services to meet the ever-growing healthcare needs of Forsyth County and its surrounding communities. The 304-bed hospital has more than 2,500 physicians and 3,000 employees. Located at: Northside Hospital Forsyth 1200 Northside Forsyth Drive, Cumming, GA 30041 (770-844-3200)

## Edward and Helen Erickson

As part of their continuing support of the Dahlonega Science Council, the Erickson's have matched all individual monetary donations that have been made to help finance the Science Festival. The Council is appreciative of their efforts to help support our activities.

***The Dahlonega Science Council is a non-profit 501(c)3 organization. Please consider being a sponsor/donor for next year's event!***

*In order to continue to grow and offer even more events and activities in the future, the Dahlonega Science Festival needs you to return in 2021. Please consider making a tax-deductible contribution to the Dahlonega Science Council, a 501(c)3 charitable organization, to help make this festival a continuing annual event! Become a sponsor in 2020! Contact: [dahlongescience@gmail.com](mailto:dahlongescience@gmail.com) for more information.*

# Festival Donors

*The following business and individuals have contributed to the funding of our festival at various levels; all donations are greatly appreciated!*

<b><i>Diamond</i></b>	• <i>Bourbon Street Grille</i>
	• <i>Naturally Georgia</i>
	• <i>Ronnie Thomas – Fun Weird Science</i>
	• <i>Shenanigans Restaurant &amp; Irish Pub</i>
	• <i>Dahlonega Sunrise Rotary</i>
	• <i>University of North Georgia</i>
<b><i>Platinum</i></b>	• <i>Chestatee Ford</i>
<b><i>Gold</i></b>	• <i>Amicalola EMC Operation Round Up</i>
	• <i>Dahlonega Resort and Vineyard</i>
	• <i>UNG Foundation</i>
	• <i>Walmart Store #2513 Community Grant, Dahlonega, GA</i>
<b><i>Silver</i></b>	• <i>Stephen Wright</i>
<b><i>Bronze</i></b>	• <i>Lanier Restaurant Management Group: 19° North Seafood &amp; Grill, GrapeVine's, Pueblos</i>
	• <i>Anonymous</i>
	• <i>Jack Wynn</i>
	• <i>Donna Gessell and John Segars</i>
	• <i>Jim O'Niel</i>
	• <i>Joe and Sharon Smith</i>
	• <i>John Anulies</i>
	• <i>Michael Brosche</i>
	• <i>Steven Leibel, Personal Injury Lawyer</i>
	• <i>United Community Bank, Dahlonega, GA</i>
	• <i>World Logo</i>



# Community Supporters and Partners

*A community-wide event of this scope is made possible by donations of space and supplies from local businesses and organizations. We thank all of our community partners for their help with this Science Festival, and we encourage all of our attendees to enjoy these businesses and organizations during our festival events and after the festival concludes.*

## Bourbon Street Grille

Bourbon Street Grille is situated on the beautiful Dahlonge square in the historic Hall House building. Boasting full bars and dining areas on two unique floors. If you don't have the time to sit down and stay a while, carry-out meals or on-foot delivery to businesses on the square are available. Our menu includes Cajun-inspired favorites like Jambalaya or Gumbo and delicious sustainably sourced seafood. Join us on the weekends for our fabulous brunch options like Crab Cakes Benedict or our infamously huge Lost Bread. Pop in for a drink, and enjoy our selection of craft beers, fine wines, and specialty cocktails.

## Dahlonge Literary Festival

The Dahlonge Literary Festival is an annual celebration of books. Now in its 17th year in historic downtown Dahlonge, Georgia, the festival gets more diverse and entertaining each year. Events are open to everyone and most are free, unless otherwise noted, and include individual presentations, panel discussions, workshops, a festival book store, book signings and more.

## Naturally Georgia

Our mission is to bring the finest wines in Georgia to one location and create a memorable experience to take with you! Here at Naturally Georgia we strive to make your wine tasting experience enjoyable and educational. Our wines are some of the finest produced in Georgia with grapes grown at our vineyards. From dry to sweet, we have a wine for everyone.

## Shenanigans

Shenanigans offers traditional Irish dishes, pub fare, seafood, vegetarian and kids' options—from the black angus burger to the grilled salmon with wild mushrooms, and Guinness tempura battered with homemade slaw and tartar sauce. Leave room for dessert because, from the Bailey's cream pie to the orange marmalade carrot cake, everything is made from scratch!

## University of North Georgia

Positioned in the fastest-growing region of the state, UNG comprises five campuses united by a single mission focused on academic excellence and academic and co-curricular programs that develop students into leaders for a diverse and global society.



## 27 on Park Hotel and Events

A dreamy boutique inn that offers luxurious yet understated furnishing and fixtures to give you a homey but clean boutique feel. Our newly added event space is perfect for any special event. Located on the Dahlonega Square where you can conveniently shop, dine, and enjoy the beautiful outdoors.



## Amicalola EMC – Operation Round Up

Operation Round-Up is a program designed to provide financial assistance to needy individuals and certain 501(c)3 community charities. Each month, we “round up” the electric bill of participating members to the next highest dollar. For example, if your electric bill is \$62.78, we would round it up to \$63.00. The additional 22 cents would go to the Operation Round-Up fund. Contributions are tax deductible and participation is strictly voluntary.



## Dahlonega Downtown Development Authority

The purpose of the Downtown Development Authority and Main Street Program is to stimulate and sustain economic development in Downtown Dahlonega by encouraging cooperation and building leadership; by advancing a positive image of downtown and promoting it as an exciting place to live, shop, and invest; by sustaining and improving the appearance of downtown; and by strengthening and expanding the economic base of downtown.



## Dahlonega Resort and Vineyard

Nestled in the foothills of Georgia’s Blue Ridge Mountains, Dahlonega Resort and Vineyard is a quick drive from Atlanta, but a world apart from the noise and sprawl. Enjoy mountain views, Georgia wine, and wooded trails. Relax with a massage, a body treatment or facial, and yoga practice. Then dine in our restaurant with fresh, locally sourced fare.



## Dahlonega-Lumpkin County Chamber and Visitors Bureau

The Dahlonega-Lumpkin County Chamber & Visitors Bureau grows the economy, attracts visitors, advocates for all businesses, and develops leaders to promote the welfare of the community.



## GSU Institute for Interdisciplinary STEM Education

i2STEMe establishes collaborative interdisciplinary programs committed to excellence in K-20 science, technology, engineering and mathematics (STEM) focusing on rural, diverse, low socioeconomic status and under-represented populations.



## Lumpkin County Historical Society

The focus of the society is to preserve and protect this area's rich historical heritage. Our organization brings together people who are interested in knowing and accurately preserving the rich history of Lumpkin County and the City of Dahlonega.



### **Paul Thomas Chocolates**

Established in 1975, this local chocolate shop is not just a candy store; it is an experience in the complexity of chocolate and its creation. These sights, sounds, and smells are surpassed only by the delectable taste of the products. One thing is for sure: when you walk out of the shop you are smiling, knowing that North Georgia is truly a "sweeter" place with Paul Thomas Chocolates here!



### **United Community Bank, Dahlonega, GA**

United Community Bank has locations throughout Georgia, North Carolina, Tennessee and South Carolina. From business and personal banking solutions to real estate and mortgage lending to advisory services, we are experts in getting you the financial support you need.



### **World Logo**

Atlanta's award winning, nationally recognized Corporate Identity Apparel and Imprinted Promotional Product business. We take into consideration the customer's mission and vision to deliver a superior product. We welcome and appreciate the opportunity to serve you for all of your branded apparel, employee uniform, and promotional marketing needs.

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## **With Additional Support from these Local Organizations:**

- Society of Chemistry Students
- Society of Physics Students
- UNG Astronomy Club
- UNG Gainesville Physics Club
- UNG NSTA Student Chapter
- UNG Psychology Club
- UNG Psi Chi Honor Society
- Women in STEM

### **North Georgia Amateur Radio Club**

Callsign W4QQ, is an amateur (ham) radio club in Lumpkin County, Georgia affiliated with American Radio Relay League (ARRL). Members enjoy making all kinds of electronic equipment including antennas, Morse Code keys, analyzers, Raspberry Pi computers, and much more!

Contact us at w0jwd@arrl.net, at <http://randyrick.us/W4QQ/> and on Facebook [www.facebook.com/groups/NGARCw4qq/](http://www.facebook.com/groups/NGARCw4qq/)

# General Event Information:

**Naturally Georgia Tasting Room** (on the square) is the site of our information booth. Need information or programs? Stop by and talk to one of our volunteers for help. You can also get your festival shirts, mugs, and other gear at Naturally Georgia!

**Science Festival Preview: TRIVIA! on Thursday, March 5<sup>th</sup> at 8:00 pm**

**Shenanigans Irish Pub** (87 North Chestatee Street) will be the site of a special Science-Trivia night to preview the festival! Come out and see how ready you are!

## Friday March 6: OPENING EVENT!

Come out to the UNG Health and Natural Science Building for our kick-off! Have some family fun with hands-on science activities, learn about the search for extraterrestrial life with Jeffrey Bennett, and enjoy a planetarium show!

- 5:00 pm: Doors Open; Welcome! Children's activities begin!
- 5:00 pm: Early Bird Planetarium show: *Max Goes to the Moon*
- 6:00 pm: Planetarium Show: *One Day on Mars*
- 7:00 pm: Jeffrey Bennett (Keynote Speaker), *The Scientific Search for Extraterrestrial Life and its Astonishing Implications for Our Future* (HNS auditorium; See page 15 for presentation description)
- 8:00 pm: Planetarium Show: *One Day on Mars*

## Saturday March 7: MAIN EVENTS!

Join us for several events ranging from family activities to panels, talks and planetarium shows. (See pages 12 and 13 for more information.)

- Bourbon Street Grille: Featured Speakers
- Dahlonega Community House: Discovery Center
- Shenanigans Irish Pub: Panel Discussions
- UNG HNS Building: Planetarium Shows and Fun Weird Science
- UNG Ecological Protection Lab: Come meet the Beetles!
- Choice Street Arts Complex: Makerbot Innovation Center
- UNG Vickery House: Environmental Make and Takes
- Dahlonega Marketplace: Hands-on Family Activities
- Dahlonega Old Jail: Escape Room; <https://dsfjail.eventbrite.com>
  - Please note: the link to reserve space will go live on 3/5/2020

## Sunday March 8: FESTIVAL WRAP-UP, Brunch Presentation

Doors open at 10:00am, talk begins at 11:00am; located at Bourbon Street Grille. Dr. Nicole Ackerman will be presenting her talk, *From LHC to PET: New Techniques in Cancer Treatment Inspired by Particle Physics*

Arrive to this event early to make sure you get a seat and place your order!

**LUMPKIN COALITION**  
is proud to support  
**Dahlonega Science Festival 2020**



**HEMLOCKFEST  
BENEFIT EVENT**



**AMERICAN CHESTNUT  
RESTORATION**



**ANNUAL RIVER  
CLEAN-UP**



**LOGAN TURNPIKE  
TRAIL MAINTENANCE**

Lumpkin Coalition is a 100% volunteer non-profit 501(c)3 charitable organization formed to facilitate projects that benefit North Georgia, Lumpkin County, its residents and visitors. We are dedicated to preserving quality of life for all those who share it. To this end, we support the preservation of a clean and healthy environment, responsible living, and responsible growth.

**[www.HemlockFest.org](http://www.HemlockFest.org)**

## SATURDAY'S FESTIVAL EVENTS: SCHEDULED EVENTS

*These activities are scheduled for specific times at various locations around Dhlonega. For events at Shenanigans and Bourbon Street, please arrive early. If you plan to order food and/or a beverage to enjoy during the event.*

Time	Science Talks at Bourbon Street Grille	Science Panels at Shenanigans Irish Pub	Time	UNG Campus, HNS Building
10:00	Nathan McNeese: Adventures and Explorations of Human-Centered Artificial Intelligence	Futuristic Medicine: The Role of Technology in Public Health	10:20	Planetarium: Harry Potter Astronomy
11:30	Kim Cobb: Climate solutions for a warming world	Natural Disasters: Using Predictive Power to Prepare for the Inevitable	11:30	Planetarium: Harry Potter Astronomy
1:00	Paula Davis-Otwell: The Future of Public Health is Global Health	Our Universe: A Continuous Evolution	1:00	Auditorium: Fun, Weird Science children's stage show
2:30	Andrew Newman: Finding Faults with Tsunamis: New tools for understanding and rapid warning of tsunami generating earthquakes	Artificial Intelligence: Implications of the Fourth Industrial Revolution	2:10	Planetarium: Harry Potter Astronomy
4:00	Brett Clementz: Can Laboratory Tests of Brain Structure and Function Improve Treatment in Psychiatry?	Climate Action: Building a Resilient Future	3:20	Planetarium: Harry Potter Astronomy
<b>Special Twilight to Starlight Event (27 on Park Hotel)</b> Refreshments, light hors d'oeuvres served at 5:00pm Keynote talk by Jeffery Bennett begins at 6:00pm <b>Global Warming Demystified: How You Can Make Sense of the Media Debate</b>			4:30	Planetarium: Harry Potter Astronomy

Please see pages 15-18 of this program for more information about the Science Talks at Bourbon Street Grille and page 24 for information about the Planetarium shows at the HNS building on the UNG campus.

## **SATURDAY'S FESTIVAL EVENTS: SHARED SCHEDULED SESSIONS WITH DAHLONEGA LITERARY FESTIVAL**

**9:00-10:50 am**

Workshop: Story Time from Space -- Jeffrey Bennett,  
Dahlonega Baptist Church, 234 Hawkins St., room 30

**3:00-3:50 pm**

Einstein for Everyone -- Jacob Appel and Jeffrey Bennett,  
Dahlonega Baptist Church, 234 Hawkins St., room 30

**5:00-7:00 pm**

Global Warming Demystified: How You Can Make Sense of the Media Debate --  
Keynote Talk: Jeffrey Bennett, presented by DSF & DLF, held at 27 on Park Hotel  
*See page 17 for a description of this talk*

5:00 pm - Light refreshments

6:00 pm - Keynote talk

7:00 pm - Question and Answer time

## **SATURDAY'S FESTIVAL EVENTS: ONGOING ACTIVITIES**

*These activities are ongoing throughout the day and attendees are welcome to come and go anytime. Reservations for the escape room are recommended. Please note that parents must accompany children at all events; unsupervised children should never be dropped off and left alone for any of these activities.*

ACTIVITY	LOCATION	TIME
Fun hands on science activities!	Dahlonega Marketplace	10:00am-12:00pm
Come take a tour and meet the beetles!	Environmental Protection Lab at UNG	10:00am-5:00pm
Environmental make and takes!	Historic Vickery House, Appalachian Studies Center	11:00am-3:00pm
Escape Room!! <a href="https://dsfjail.eventbrite.com">https://dsfjail.eventbrite.com</a>	Dahlonega Old Jail Reservations begin on 3/5/20	12:00pm-4:15pm
Discovery Center activities and tea party!	Community House	12:00pm-5:00pm
Maker's Fair at the Makerbot Innovation Center!	Choice Street Arts Complex	12:00pm-5:00pm

**Please see page 25 for more information about these ongoing activities**



  
**NORTHSIDE**  
**HOSPITAL**  
[northside.com](http://northside.com)

**The perfect fit for  
your community.**



# 2020 Guest Speaker Talks

FRIDAY, MARCH 6 @ UNG HEATH & SCIENCES BUILDING @ 7:00 pm

***Jeffrey Bennett: The Scientific Search for Extraterrestrial Life and its Astonishing Implications for Our Future***

Is there really life beyond Earth? Reports of UFOs are unlikely to give us an answer, but science may soon be able to. Author and astrophysicist Jeffrey Bennett will talk about why the search for life beyond Earth has become a hot topic of scientific research, and discuss how scientists are searching both for microbial life and extraterrestrial intelligence. Along the way, we'll also see why the possibility of life beyond Earth has profound implications to the future of our species, even in the unlikely event that we are alone in the universe. Please note that this talk draws from two of Dr. Bennett's books Beyond UFOs (Princeton University Press, 2008/2011) and Life in the Universe (Pearson, 2017).

SATURDAY MARCH 7: GUEST SPEAKER TALKS @ BOURBON STREET GRILLE

*Immediately following each talk on Saturday, the speaker will be available for questions & answers at the Naturally Georgia Tasting Room, adjacent to the Bourbon Street Grille. This will allow time between talks for ordering food and beverages.*

**10:00 am: Nathan McNeese - *Adventures and Explorations of Human-Centered Artificial Intelligence***

In this talk, we will conceptualize and explore the area of human-centered artificial intelligence (AI). Simply, human-centered AI refers to the importance of integrating human knowledge, cognition, and understanding into the development AI agents. Without an understanding of both human behavior and cognition, then humans and AI will not be able to effectively interact or work together. In this talk, multiple research projects will be presented, many with a focus on human-AI teaming where a human and an AI agent work together to solve common shared goals.

**11:30 am: Kim Cobb - *Climate Solutions for a Warming World***

Battered by depressing climate headlines but unsure if and how you can be part of the climate solution? You are not alone. In this talk, climate scientist Dr. Kim Cobb will talk about her coral research on remote Pacific reefs, and how it spurred her to engage in climate solutions within her own family and at the local, state, national, and international level. Learn about the most impactful solutions to reverse global warming, with a particular focus on those solutions that will expand economic opportunity and advance equity in Georgia.

**1:00 pm: Paula Davis-Olwell - *The Future of Public Health is Global Health*** This presentation outlines the field and practice of global health, including tools for assessing global health, sources of information about global health and the institutions and processes in place for dealing with global health challenges. I will distinguish between public health, which addresses population health at the level of the nation-state and global health which addresses health issues shared by various nation-states (comparative) as well as those health problems that transcend national borders and cannot be managed by one nation alone (global).

**2:30 pm: Andrew Newman - *Finding Faults with Tsunamis: New Tools for Understanding and Rapid Warning of Tsunami-generating Earthquakes***

In my presentation I will discuss many of the efforts my research group (as well as many others) has made in understanding how the shallow subduction processes impact the formation and generation of the largest of earthquakes globally, causing, in turn, devastating tsunamis. I will step you through my field research along the Middle America trench of Costa Rica and Nicaragua, and the San Cristobal trench of the Solomon Islands, as well as the remotely studied works elsewhere to unlock the behavior of tectonically-driven plate coupling and ultimately catastrophic release such large events as was seen in Japan in 2011. The studies incorporate earthquake seismology, on-land GPS and other geodetic surveys. In order to better forecast where future tsunami causing earthquakes will occur, we have been leading the way in developing an understanding of shallow offshore fault processes. This includes both examination of analog systems, and the development of new instrument systems for deployment offshore, for observation of behavior that can lead to the next great earthquake. We are working with the National Science Foundation to secure a large seafloor instrument pool to make necessary ground deformation measurements using a combination of GPS and underwater-acoustic signals. Lastly, I am working to improve on codes that I developed over the past two-decades for early detection of slow-rupturing earthquakes, the kind that tend to occur near the trench and effectively produce tsunami waves. We are further developing these codes for more rapid and robust near-field warning, to save more lives immediately after an earthquake.

**4:00 pm: Brett Clementz - *Can Laboratory Tests of Brain Structure and Function Improve Treatment in Psychiatry?***

Psychiatry aspires to “precision medicine,” the ability to use specific treatments for persons with specific differences in biology. However, such missions may be compromised by reliance on DSM diagnoses alone. For example, our research has identified and replicated distinct biological subtypes (Biotypes) of psychosis, which may outperform conventional DSM diagnoses. The clinical manifestations of these Biotypes and their possible usefulness in clinical practice is of paramount

importance as Biotypes have unique and defining clinical features that can be used as initial screens in the clinical and research setting. Differences in these clinical features are highly consistent with Biotype measures of brain structure and function, indicating a link between biological features and clinical presentation that differ from those among DSM psychosis diagnoses, indicating that Biotypes and DSM syndromes are not redundant and yield remarkably different treatment prescriptions. I highlight three Biotype predictions that are specific to individual brain functioning features, and are not derivable from DSM psychosis syndromes. In the future, considering both the clinical and biological features of neurobiological psychosis subtypes may prove useful for targeting distinct biological, cognitive, and psychosocial therapies for more effective treatment and improved functional outcomes.

## **SATURDAY MARCH 7: TWILIGHT TO STARLIGHT TALK @ 27 ON PARK**

*Special joint event with Dahlenega Literary Festival*

**Appetizers and social hour, beginning at 5:00pm**

### **6:00 pm: Jeffrey Bennett: *Global Warming Demystified – How You Can Make Sense of the Media Debate***

Is human-induced global warming real or a hoax? Most people will express an opinion on this question, but relatively few can back their opinions with solid evidence. This is true on both sides, as most “believers” are no better able to explain the scientific case for global warming than “skeptics” are able to make a case against it. Many times we’ve even heard politicians and media pundits say “I am not a scientist” to avoid the issue altogether. But the truth is, the basic science is not that difficult. In this presentation, noted educator Jeffrey Bennett will give you the foundation you need to speak intelligently about the science behind global warming, and show you why the solutions to this important problem are ones that people of all political persuasions can agree on. If you have any questions or doubts about the reality of global warming or what we should do about it as a nation, you’re sure to come away enlightened. The level is suitable for anyone of middle school age and up. Note: This talk is based on Dr. Bennett’s Global Warming Primer, found at <https://www.globalwarmingprimer.com/>

## FESTIVAL FINALE:

SUNDAY MARCH 8 AT THE BOURBON STREET GRILLE

**11:00 am: Nicole Ackerman - From LHC to PET: New Techniques in Cancer Treatment Inspired by Particle Physics**

While particle physics seems very exotic, it also has applications that impact our lives in very important ways. Radiation-based cancer imaging and treatment uses many technologies first developed for particle physics, from advanced computational modeling to detecting "faster than light" particles. Some technologies move quickly from physics lab to clinic, while others take decades for us to realize their potential.

Socialize and order your **brunch @ 10:00 am**. This talk begins promptly at 11 am. Seats are first come, first served.

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***Come join us at Naturally Georgia after each speaker finishes at Bourbon Street for an informal question & answer with the scientists.***



On Dahlonega Square, 90 Public Square N  
(706) 864-0832

At Naturally Georgia we strive to make your wine tasting experience enjoyable and educational. Our wines are some of the finest produced in Georgia with grapes grown at our vineyards. From dry to sweet, we have a wine for everyone. Art by the local Bleu artists, handmade jewelry and pottery. Wine accessories and gift items.

**Naturally Georgia is proud to host fundraising events for the 2021 Science Festival on the following dates. We encourage everyone to attend these events!!**

**4/10/2020: Trivia!**

**8/21/2020: Hooray, it's your birthday!**

**12/10/2020: Cuddly Christmas time!**

**6/19/2020: Killer Plants!**

**10/29/2021: Halloween Party!**

**2/19/2021: Let's be Social!**

## **SPECIAL COMMUNITY ACTIVITY!**

### **The Science of Chocolate**

**10:00am and 11:30 am**

Join our chocolatiers at Paul Thomas Chocolates, on the Downtown Dahlonega Square, to discuss the process of tempering chocolate. Come learn about the chemistry involved and how this process changes the look and taste of chocolate. Then see for yourself how we use this tempered chocolate to make our delicious confections!

*Limited to the first 12 people for each time listed above*

**Location: Paul Thomas Chocolates (102 Public Square North)**

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## **SPECIAL OPEN HOUSE • ONE DAY ONLY**

**Lumpkin County Historical Society's**

### **1884 OLD JAIL MUSEUM**

**75 Enota Street • Saturday, March 7<sup>th</sup> • 10:00am – 4:00pm**

#### **Meet Dahlonega's First Literary Celebrity W.B. TOWNSEND**



Vanishing Georgia, GA. Archives, University System of GA.

William Benjamin Franklin Townsend (1857-1933) was a legendary newspaper man in a time of hard type. The owner and editor of The Dahlonega Nugget for 36 years, his wry, cranky, and observant columns were picked up and reprinted by metropolitan newspapers and magazines throughout the United States and Canada.

The museum's tribute to W. B. Townsend features excerpts from his writing and a large type case with examples of the cold type he would have used to set type for his newspaper, one letter at a time.



Special Collections & Archives, University of North Georgia Libraries



**"Observations from a Peak in Lumpkin County"** is a compilation of some of Townsend's most interesting writings. Out of print. A few copies are available for sale at the Open House.

The museum is a 2-minute walk from the Gold Museum and Public Square.

**Free Parking**

# 2020 Science Panels

All panels will be held upstairs at Shenanigans Irish Pub on Saturday March 2<sup>nd</sup> at the specific times indicated below. Join us for breakfast, lunch, or a snack and get ready for some great science discussions! Bring some of your own questions to be discussed, or generate new questions as our science specialists discuss these topics! Please arrive to the panel discussions early to place your order for food and drinks before each panel begins. Panelists will be available at Naturally Georgia after each panel presentation for an informal Q&A.

## **Morning Panels:**

### **10:00 am – *Futuristic Medicine: The Role of Technology in Public Health***

Technology plays a huge role in all of our daily lives, and an increasingly important role in public health practice. Steady advances in gene editing techniques and improved understanding of brain chemistry are just a couple of examples of how science seeks to improve our ability to protect and improve health, while rapid chemical and technological innovations in industry may pose novel and long-lasting risks to public health. Join our diverse panel of experts in a discussion of how these ongoing developments may affect the health and well-being of future generations.

- Brett Clementz (UGA, Psychology and Neuroscience)
- Frank Crittenden (UNG, Biology)
- Ed Erickson (Consultant)
- Rachel Rogers (CDC, Environmental Science)

### **11:30 am – *Natural Disasters: Using Predictive Power to Prepare for the Inevitable***

There is no better demonstration of the immense scale and sheer power of Earth than natural disasters. Earthquakes, tsunamis, volcanic eruptions, tornadoes, hurricanes, and more! Historically, these types of events have been known to reshape continents and devastate entire populations. Our panel of experts will discuss how science continues to aid in humanity's efforts to understand and mitigate the risks associated with these inevitable global events.

- Kelli McCarthy (UGA, Emergency Management)
- Lorraine Morris (Lumpkin County Emergency Management Agency)
- Andrew Newman (GA Tech, Geophysics)
- Chris Seminack (UNG, Geologic Research)

## **Afternoon Panels:**

### **1:00 pm – *Our Universe: A Continuous Evolution***

The Universe may seem to us like a calm and static place in which humanity continues to evolve. But, over timescales much longer than our own human lifetimes, there are stars and galaxies that are born and then die with nothing much more than a brief flicker of light. This panel will discuss the largest scales of space and time, of which we occupy but a tiny fraction, to see what we can understand about a Universe that will continue long after we are gone and how that understanding may shape our own humanity.

- Jeffrey Bennett (University of Colorado, Astrophysics)
- Misty Bentz (GA State University, Physics and Astronomy)
- Sarah Formica (UNG, Physics and Astronomy)
- Ed Macaulay (UNG, Physics and Astronomy)
- Amanda Moffett (UNG, Physics and Astronomy)

### **2:30 pm – *Artificial Intelligence: Implications of the Fourth Industrial Revolution***

The mechanization of manufacturing with the power of steam; advances in science and engineering driving increased mass production; digital technologies and computing revolutionizing global communication; artificial intelligence (AI) merging the physical, digital, and biological worlds. Developments in AI may fundamentally alter the way in which we live, work, and relate to each other, potentially reshaping society as we know it. Our experts will discuss key technologies and their implications in the "Fourth Industrial Revolution".

- Fred Maier (UGA, Institute for Artificial Intelligence)
- Sonny Mantry (UNG, Physics)
- Nathan McNeese (Clemson University, School of Computing)
- Chuck Robertson (UNG, Psychology)
- Yong Wei (UNG, College of Business)

### **4:00 pm – *Climate Action: Building a Resilient Future***

The science is clear - human activity has made, and will continue to make, a measurable impact on the world's climate. Just how consequential these global changes will be depends on the actions we take now and in the near future, and how we develop a resiliency to climate-related risks. This discussion will focus on how we can convince those who remain skeptical of the urgency of this issue and on the actions that we can take as individuals and as a nation towards ensuring a bright and prosperous future for our children and grandchildren.

- Jeffrey Bennett (University of Colorado, astrophysics)
- Kim Cobb (GA Tech, Oceanography and climate change)
- John Indergaard (UNG, Physics and Astronomy)
- Jeff Landgren (UNG, Mathematics)
- Frank Lock (Climate Reality Project presenter)



87 North Chestatee Street  
706-482-0114

Shenanigans offers traditional Irish dishes, pub fare, seafood, vegetarian and kids' options, plus the star attraction—Guinness tempura battered fish & chips with homemade slaw and tartar sauce. From the largest draft selection in town to a huge selection of bottled microbrews (featuring a rotating tap!) and signature cocktails, Shenanigans offers a wide variety of your favorite drinks, sure to please any palate!

<http://www.theshenaniganspub.com/>



90 Public Square N.  
706-864-0086

Bourbon Street Grille is situated on the beautiful Dahlonge square. Located in the historic Hall House building, Bourbon Street Grill boasts full bars and dining areas on two unique floors. From Cajun-inspired favorites like Jambalaya or Gumbo to delicious seafood such as fresh Apalachicola Oysters or Blackened Redfish, and even that juicy Black & Blue Sirloin or Burger, we have a fantastic dish to satisfy any taste.

<http://www.thebourbonstreetgrille.com/>





## **The University of North Georgia**

UNG is part of the University System of Georgia and is designated as a State Leadership Institution and The Military College of Georgia. The UNG Foundation is governed by a volunteer Board of Trustees who conduct the business of the Foundation in regard to donor funds and gift agreements.



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## **Check out the Dahlonega Literary Festival!!**



The Dahlonega Science Festival is proud to partner with the Dahlonega Literary Festival again this year. Be sure to spend some time at their events as well as our combined events with keynote speaker Jeffrey Bennett! You'll find all the info for their activities alongside ours in the festival app!

<https://literaryfestival.org/>

## 2020 Planetarium Shows

*Enjoy a variety of special shows at the UNG Planetarium!  
Located in the HNS Building on the UNG Campus.*

### **FRIDAY, MARCH 6<sup>th</sup>**

#### **5:00 pm: *Max Goes to the Moon***

Journey with Max the dog and a little girl named Tori to visit the Moon, based on the award-winning children's book, *Max Goes to the Moon* by Dr. Jeffrey Bennett. We'll learn about the real science of what it would be like to stand and live on the Moon.

#### **6:00 pm and 8:00 pm: *One Day on Mars***

Spend a day on Mars touring the grand sights, and learn about past missions that built our view of Mars today. We'll stop by Georgia for a view of the current night sky and journey once more to the Red Planet to explore current and future missions.

### **SATURDAY, MARCH 7<sup>th</sup>**

#### ***Harry Potter Astronomy***

Peer into the magical world of Harry Potter through the lens of science! We'll explore how J.K. Rowling used constellations, star names, and astronomy to add depth to the characters and enchanting classes of Hogwarts.

Due to the popularity of this show, we are pleased to announce that we will be conducting this event at several times throughout the day on Saturday!

**Show times will be at:**

**10:20am, 11:30am, 2:10 pm, 3:20 pm, and 4:30 pm**

# 2020 Science Festival Family Activities

## Hands-on Science Children's activities - 10:00 am to noon

Join us for more than a dozen Hands-on Science Activities for kids! Explore the science of sound energy, camouflage, and more! Fun for the whole family!!

Sponsored by the Dahlonge Sunrise Rotary Club

Location: Dahlonge Marketplace (100 Public Square North)

## Environmental Leadership Center Lab Tour – 10:00am to 5:00pm

Explore UNG's lab that is dedicated to ecosystem restoration. Meet the predatory beetles and see the biological controls used to fight the invasive species, the Hemlock Woolly Adelgid. Explore through microscope investigations and do bug related crafts for the youngest scientists! Lab tours are ongoing through the day.

Location: Ecological Protection Lab (332 Sunset Drive)

## Environmental Make and Takes – 11:00am to 3:00pm

Come out to 'bee' a help your local pollinator population! Construct your own bee hotels from natural materials! Plant wildflower seeds, specifically chosen for local Georgia pollinators, in compostable planters to plant in your own yard! Take your creations home and watch them thrive!

Location: Historic Vickery House, Appalachian Studies Center (West Main Street)

## Escape Room – 12:00pm to 4:15pm

These science-based puzzles will incorporate the use of biology, coding, physics, and math skills for teams of one to five. Come try solving the clues to escape from an actual jail cell at the historic Dahlonge jail. **NOTE: This is a free, event, but please use the link below to reserve your time slot. Entry will be limited to ticket holders that arrive during their selected time slot. Please present tickets at the door upon arrival. Approximate solve time ~30 mins.**

Please go to <https://dsfjail.eventbrite.com> starting on 3/5/20 to reserve your time!

Location: Dahlonge Old Jail & Museum (75 Enota Street)

## Discovery Center – 12:00pm to 5:00pm

Join us as we explore and learn about various scientific disciplines through fun hands-on activities! Afterwards, you can relax with our scientists at our tea party!

Location: Dahlonge Community House (111 North Park Street)

## Makerbot Innovation Center – Noon to 5:00 pm

Explore a variety of exciting science, engineering, and DIY activities! Get up close with MakerBot 3D Printers and see how they can be used in a fun way to solve real world problems. Explore exhibits in Physics, Radios, Electronics, Astronomy, and Model Rocketry with Southern Area Rocketry (SoAR)! Fun for the whole family!

Location: UNG MakerBot Innovation Center (122 Choice Avenue)

## ***SPECIAL EVENT!***

### **Fun Weird Science!!**

**1:00pm – 2:00pm**

Come over to the HNS Auditorium with your family to experience a science pep rally to get you excited about making STEM fun! Learn all about the variety of science, technology, engineering, and mathematic fields and how you can get your very own Fun Weird Science Kit! Guaranteed fun for the whole family! This crew consists of enthusiastic and passionate technology educators and creators with a solid commitment to the social, academic and developmental growth of every student. Known for their engaging and versatile teaching methods, the Fun Weird Science team has the ability to inspire hands-on learning experiences that capture a student's imagination.

**Location: UNG Health & Natural Sciences Building (159 Sunset Drive)**

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A vibrant yellow promotional graphic for Fun Weird Science. On the left, a collage of black icons represents various STEM fields: a location pin, a clock, a microscope, a heart, a puzzle piece, a flask, a rocket, a pushpin, and a submarine. In the center, a cartoon scientist in a red lab coat holds test tubes, surrounded by the text 'FUN WEIRD SCIENCE' in a circular, colorful font. To the right, the words 'EVERYTHING STEM' are written in large, bold, black letters. Below this, a bulleted list of activities is provided: Online STEM Courses, Live Science Shows, Birthday Parties, STEM Saturdays, Summer Camps, and STEM Field Trips. At the bottom left, the Instagram handle '@funweirdscience' is shown above icons for Instagram, Twitter, and Facebook. The website 'www.funweridscience.com' is centered at the bottom. On the bottom right, there is a small photo of the team and a YouTube icon with the text 'Fun Weird Science TV' below it.

**EVERYTHING STEM**

- Online STEM Courses
- Live Science Shows
- Birthday Parties
- STEM Saturdays
- Summer Camps
- STEM Field Trips

@funweirdscience

[www.funweridscience.com](https://www.funweridscience.com)

Fun Weird Science TV

**Text the word Science to 21000 for program offerings**

## 2020 Guest Speaker Bios

**Dr. Jeffrey Bennett** is our keynote speaker this year for the combined Science and Literary Festivals.



**Dr. Bennett** (Ph.D., Astrophysics, University of Colorado) is the author of six children's books that have been selected for the Story Time From Space program, and of several critically-acclaimed books for the general public including *What is Relativity?*, *Math for Life*, *On Teaching Science*, and *A Global Warming Primer*. He is also the lead author of college textbooks in astronomy, astrobiology, mathematics, and statistics.

Combined, his books have sold more than 1.5 million copies. Other career highlights include teaching at every level from preschool through graduate school, spending two years as a Visiting Senior Scientist at NASA Headquarters, proposing and co-leading the creation of the Voyage Scale Model Solar System on the National Mall in Washington, DC, and creating the free app "Totality by Big Kid Science" to help people learn about and view solar eclipses. He has been recognized with numerous awards, including the American Institute of Physics Science Communication Award. Dr. Bennett is an acclaimed public speaker for all ages. He has spoken at nearly 200 elementary schools, at numerous middle and high schools, at dozens of colleges and universities, and for many groups of scientists and educators in the U.S. and internationally.

**Please see pages 15 and 17 for information about Dr. Bennett's presentations.**



**Dr. Nicole Ackerman** is an Associate Professor of Physics at Agnes Scott College in Decatur, GA. She received her S.B. in Physics from MIT, where she engaged in particle physics research at CERN and SLAC. She completed her PhD in Physics in 2013 at Stanford University, where she performed research within Radiation Oncology. Her current research uses computational simulations to understand and improve new techniques in radiation-based cancer treatment and imaging. Recently, she has participated in an

international collaboration led by Oxford University to design a targeted treatment to prevent metastatic brain cancer. In addition to teaching undergraduate students all levels of physics at Agnes Scott, she frequently travels to India as part of the Emory-Tibet Science Initiative to teach physics to Tibetan Buddhist monks and nuns.



**Dr. Brett Clementz** is a Distinguished Research Professor in the departments of Psychology and Neuroscience at the University of Georgia. For over 25 years, he and his team have examined the neural bases of basic sensory and cognitive impairments in individuals with psychosis using a variety of brain imaging technologies, including MRI, EEG, and MEG. His research program aims to understand the neural circuitries that support sensory registration and cognition in psychosis and related psychiatric syndromes to develop biomarker-based classification health systems.

This research involves discerning how neural activities in areas like the sensory cortices are influenced by other areas, like the prefrontal cortex. The advantage of our approach is that we work with biomarkers that are involved in the complex pathway associated with psychosis. Dr. Clementz's research takes an explicit clinical and translational systems oriented approach that cannot be reasonably accomplished without using multiple neuroscience methodologies at various levels of investigation.



**Dr. Kim Cobb** is the director of the Global Change Program in Atlanta, GA and a professor at the Georgia Institute of Technology. Kim Cobb's research uses observations of past and present climate to advance our understanding of future climate change impacts. She received her B.A. from Yale University in 1996, and her Ph.D. in Oceanography from the Scripps Institute of Oceanography in 2002. She spent two years at Caltech in the Department of Geological and

Planetary Sciences before joining the faculty at Georgia Tech in 2004. Kim has sailed on multiple oceanographic cruises to the deep tropics and led caving expeditions to the rainforests of Borneo in support of her research. Kim has received numerous awards for her research and is honored to be a Lead Author for the IPCC Sixth Assessment Report. Dr. Cobb is a mother of four and is, as such, a strong advocate for women, diversity, and inclusion in science and is also devoted to the clear and frequent communication of climate change to the public through speaking engagements and social media.



**Dr. Andrew Newman** is a Professor of Geophysics at Georgia Tech. He received his MS and Ph.D. degrees in Geophysics from Northwestern University, and his research interests lie in understanding active deformation and failure of the Earth's lithosphere in seismic and volcanic provinces and its impact on society. Accordingly, he focuses his studies on fields that have application in advancing our understanding of natural geologic hazards. Thus far, he started several such projects with this in mind. Though these interests are broad, he plans to focus on several aspects of each.

Specially, in earthquake zones, he is most interested in studying lithospheric forcing, earthquake faulting, failure mechanics, and factors controlling the recurrence of large events. In volcanic regions, he aims to understand magmatic source physics and rheology through interpretation of ground deformation, tomography and volcano-induced seismicity. Dr. Newman strives to integrate thermal, hydrogeologic, gravity, petrologic and other tools in his research.





**Dr. Nathan J. McNeese** is an Assistant Professor and Director of the Team Research Analytics in Computational Environments (TRACE) Research Group within the division of Human-Centered Computing in the School of Computing at Clemson University and he has an affiliation in Clemson's Human Factors Institute. He is also Director of the Clemson University Data Lab. He received his PhD in Information Sciences and Technology from The Pennsylvania State University in 2014. His research interests focus on human-centered artificial

intelligence (AI) and human-AI teaming. He currently serves on multiple international/societal program and technical committees, in addition to multiple editorial boards. He is a member of the National Academies of Science Panel on Human Factors Science, and previous member of the Army Research Lab HERD Technical Advisory Board. His research has received multiple best paper awards/nominations and has been published in peer-reviewed venues over 65 times. In addition, he has acquired over \$8M in research funding from agencies such as NSF, ONR, AFOSR, and AHRQ.



**Dr. Paula Davis-Olwell** is a demographer with expertise in public health nutrition and medical anthropology. Her research on infant feeding in Uganda developed an observational methodology for measuring mothers' implementation of exclusive breastfeeding. Dr. Davis-Olwell has over 10 years' experience conducting research on infant feeding practices and maternal and child health in Africa (Uganda and Ghana). She was on the faculty of Population Studies at Makerere University in Kampala, Uganda and she has collaborated with

faculty at Kwame Nkrumah University of Science and Technology in Kumasi, Ghana. Prior to University of Georgia, Dr. Davis-Olwell taught in Public Health at Mercyhurst University and Health Care Administration at Mary Baldwin College, where she taught courses in health policy, medical anthropology and health care ethics. She has previously taught in Africana Studies at University of Pittsburgh and at Brown University. Her research and teaching address present-day public health issues—malnutrition, maternal mortality, mental health, population policy, infectious diseases, refugee health—through a lens of social studies of science and technology.



## Meet Our Panelists

### Futuristic Medicine: The Role of Technology in Public Health *Saturday 10:00 am*



**Brett Clementz**, PhD is a professor in UGA's departments of Psychology and Neuroscience. His research focuses on the neural basis of psychological disorders and the technology that can be used to image these neuroabnormalities with the goal of developing biomarker-based classification systems as a means of developing better diagnostics.



**Frank Crittenden**, earned his PhD in biomedical sciences from the University of Alabama at Birmingham and is a professor of biology at UNG Dahlonega. He leads an undergraduate research team that is investigating the mechanisms of oxidative stress protection in neurons.



**Ed Erickson**, has extensive managerial experience in diagnostics, therapeutics, and life science research products having served as president, CEO, and director/chairman of over a dozen private and public companies. Early in his career he worked in the fields of information technology, energy and natural resources, and defense systems. Mr. Erickson holds an MBA from the Harvard Graduate School of Business Administration and did military service as an officer in the U.S. Navy



**Rachel Rogers**, PhD is an environmental scientist at the CDC Agency for Toxic Substances and Disease Registry where her research has focused on pharmacokinetic modeling of PFAS with an emphasis on human exposure. She currently serves as the Lead for the PFAS Community of Practice.



**Captain Reina Turcios-Ruiz**, MD, leads the FETP's Monitoring and Evaluation team at CDC's Workforce and Institute Development Branch. She serves as an Epidemic Intelligence Service Officer at the CDC and has published multiple pieces on public health and disease systems.

## Meet Our Panelists

### Natural Disasters: Predictive Power for the Inevitable *Saturday 11:30 am*



**Kelli McCarthy**, MS, is an Emergency Preparedness Manager at the University of Georgia's Institute for Disaster Management and currently manages the Georgia Healthcare Coalition Assistance Program and the HHS Region IV Operation Wesley Ebola Exercise Program. She has Georgia Emergency Management and Homeland Security Agency Georgia Emergency Manager Certification, the Emergency Management Healthcare Professional certification from the Georgia Department of Public Health, and is a trained-trainer for and Homeland Security WMD radiological/nuclear awareness.



**Lorraine Morris** is the Deputy Director of the Emergency Management Agency in Lumpkin County. She has worked several local and regional disasters during her career in public safety and has a masters certificate in Emergency Management and certifications as a Firefighter, Emergency Medical Technician, and amateur radio operator.



**Andrew Newman**, PhD, is a professor of Geophysics at Georgia Tech. His research is on active deformation and brittle failure of the Earth's lithosphere in seismic and volcanic provinces. Dr. Newman's research focuses on the physical processes that drive geologic hazards, with the understanding that through understanding and characterization we can then usefully mitigate the risk.

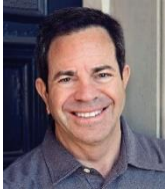


**Chris Seminack**, PhD, is an assistant professor in the Geology department at UNG. He researches the geologic framework of coastal environments, climate change, sea-level change, and ancient coastal environments. He is especially interested in storm impacts on US barrier islands and reconstructing former tidal inlets along barrier islands using a multi-proxy approach including the analysis of aerial photography and historic nautical charts, remote sensing, geological surveying, sediment coring, and geochronology.

# Meet Our Panelists

## Our Universe: A Continuous Evolution

***Saturday 1:00 pm***



**Jeffrey Bennett**, PhD, is a professor of Astrophysics at the University of Colorado. He is prolific author and is very passionate about bringing the science of astronomy to the public through his books, his online global warming primer, and his app Totality by Big Kid Science. He regularly speaks at schools and universities for audiences of all ages.



**Misty Bentz**, PhD, is an associate professor of Physics and Astronomy at Georgia State University. As an astrophysicist, she specializes in ground- and space-based imaging and spectroscopy, with a focus on active galactic nuclei and black holes. Her work utilizes several well-known telescopes, including the Hubble Space Telescope, the Gemini Observatory, and the Apache Point Observatory.



**Sarah Formica**, PhD, is a faculty member in the UNG Department of Physics and Astronomy. She received her PhD in Physics from the University of Albany, and her research interests include X-ray Fluorescence Spectroscopy and other methods of materials analysis, X-ray Optics, and physics education research. She teaches several upper level courses and manages a productive student research team.



**Ed Macaulay**, PhD is a professor of physics and astronomy at the University of North Georgia. His focus is on understanding space - not the stuff in space - but the space itself. Specifically, his research focuses on leveraging supernova observations to study the cosmos in new ways.



**Amanda Moffett**, PhD, is an assistant professor in the Department of Physics and Astronomy at the University of North Georgia where she teaches multiple courses and continues to research the physical processes governing galaxy formation and evolution as a collaborator on multiple large galaxy survey projects.

## Meet Our Panelists

### AI: Implications of the Fourth Industrial Revolution

*Saturday 2:30 pm*



**Fred Maier**, PhD Associate Director of and an assistant research scientist at UGA's Institute for Artificial Intelligence. His research is in logic and artificial intelligence, particularly knowledge representation and nonclassical (nonmonotonic and paraconsistent) reasoning.



**Sonny Mantry**, PhD, is an associate professor in the UNG Department of Physics and Astronomy. His research focus is in the area of theoretical nuclear and particle physics. He has worked on a variety of problems in particle physics relevant to various experiments, including those at the Large Hadron Collider and the Tevatron as well as the proposed Electron-Ion collider.



**Nathan McNeese**, PhD, serves as the director of the Team Research Analytics in Computational Environments (TRACE) research group at Clemson University. His research centers on artificial intelligence technology and the ways in which humans interact with AI tech human-AI teaming. He currently serves on multiple international and societal program and technical committees.





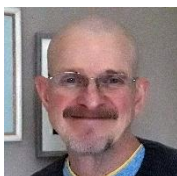


**Chuck Robertson**, PhD, is a professor of Psychology at UNG. His areas of expertise include Cognitive Sciences, Aging, and Memory. He enjoys working with students on undergraduate research projects, especially when studying the topics of memory and human computer interaction.



**Yong Wei**, PhD, is an associate professor of computer science at the University of North Georgia. He previously served as a software engineer at SUN Microsystems. His current research is in the areas of Computer Vision, Image/Video Processing, Machine Learning, Mobile Multimedia Computing, and medical image processing. He is also interested in information/cyber security.

# Meet Our Panelists

<b>Climate Resiliency: A Warming World of Rising Seas</b> <b><i>Saturday 4:00 pm</i></b>	
	<p><b>Jeffrey Bennett</b>, PhD, is a professor of Astrophysics at the University of Colorado. He is prolific author and is very passionate about bringing the science of astronomy to the public through his books, his online global warming primer, and his app Totality by Big Kid Science. He regularly speaks at schools and universities for audiences of all ages.</p>
	<p><b>Kim Cobb</b>, PhD, is the director of the Global Change Program in Atlanta, GA with a research focus on better understanding the impact of future climate change by reviewing past and present climate observations. She has studied climate change in oceans, rain forests, caves, and several other geographical settings on Earth.</p>
	<p><b>John Indergaard</b>, MS, has studied the electromagnetic properties of nanometer-scale clusters of metal atoms, and works as the Lab Coordinator for UNG's Department of Physics and Astronomy. He is actively involved in teaching and developing lab curriculum at UNG and regularly engages with the community for science education.</p>
	<p><b>Jeff Landgren</b>, PhD, joined the UNG Mathematics faculty in 2016. His mathematical research interests lie primarily in Partial Differential Equations and the application to fluid flow. He has invested his time on two projects investigating the movement of electrons in batteries, capacitors, and solar cells and developing more precision in the equations that illustrate the flow of sea ice in the Arctic.</p>
	<p><b>Frank Lock</b> became a Climate Reality Project presenter in 2019 and has made numerous presentations throughout Georgia. Previous to his retirement from academia, he served as a middle- science educator in Niagara Falls, NY, a high-school teacher in school chemistry, physics, and astronomy in Englewood, FL, and a teacher in Residence in the Georgia State physics and astronomy department.</p>



44 Lumpkin County Parkway, Dahlonega, GA 30533

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**Dahlonega  
Sunrise  
Rotary**



**Meets every Thursday at 7:30am  
at the UNG Dining Hall**

**Find us on [Facebook](#) or go to  
[dahlonegasunriserotary.com](http://dahlonegasunriserotary.com)  
for further information**

**University of North Georgia Banquet Hall  
402 College Circle, Dahlonega, GA 30533**

***Proud sponsor of our hands-on science children's activities at  
the Dahlonega Marketplace (see page 25)***

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Interested in having your business involved in the 2021 festival? Supporting our festival is a great way to advertise for your business while engaging in community outreach. We love to see our community businesses and industries more involved and sharing how science applies to your work! Send an email to: [dahlonegascience@gmail.com](mailto:dahlonegascience@gmail.com) to talk about how to be included in next year's program!

# Fun Festival Gear!!



**Available during the festival at  
Naturally Georgia Tasting Room**

**Find more Dahlongega Science gear here:**

<https://dahlongega-science-council.square.site/s/shop>



***Follow Dahlonga Science Council  
online to stay up to date on all our  
events! Find information about our  
monthly Science Café presentations,  
read fun science tweets, and learn  
about the latest science news!***

**[www.dahlongascience.org](http://www.dahlongascience.org)**



**[@NorthGAScience](https://twitter.com/NorthGAScience)**

**[Dahlonga Science Council](#)  
[Dahlonga Science Festival 2020](#)**





# Festival Locations

You can find activities all over Dahlonge!



## Parking Information:

In addition to regular Dahlonge parking lots, UNG student, faculty, and visitor spots are open on the weekends. Specific UNG lots include:

- L32, Walker Deck near HNS
- L14, Parking deck near lot L16 (Park Street and Church Street)
- L16, Church Street lot near downtown and the Makerbot Center
- L19, inside the main entrance of UNG
- L49, near the UNG Library



**Want to share your thoughts on  
this year's Science Festival?**

***Please check out our survey!***

**You can find our survey online at:**

**[https://ung.co1.qualtrics.com/jfe/form/SV\\_6rLo6qXZcjhHMX3](https://ung.co1.qualtrics.com/jfe/form/SV_6rLo6qXZcjhHMX3)**

**or by using the QR code below!!**



***We greatly appreciate your time and  
feedback!! Thank you!***

**It's never too early to begin showing your support for our 2021 festival! Consider becoming a sponsor or donor, and/or join us at Naturally Georgia for each of the following fundraiser social events!**

<b>4/10/2020: <i>Trivia!</i></b>	<b>6/19/2020: <i>Killer Plants!</i></b>
<b>8/21/2020: <i>Hooray, it's your birthday!</i></b>	<b>10/29/2021: <i>Halloween Party!</i></b>
<b>12/10/2020: <i>Cuddly Christmas time!</i></b>	<b>2/19/2021: <i>Let's be Social!</i></b>



***For next year's  
Dahlonge Science Festival***

***March 5th-7th, 2021***

MARCH 2021						
Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

