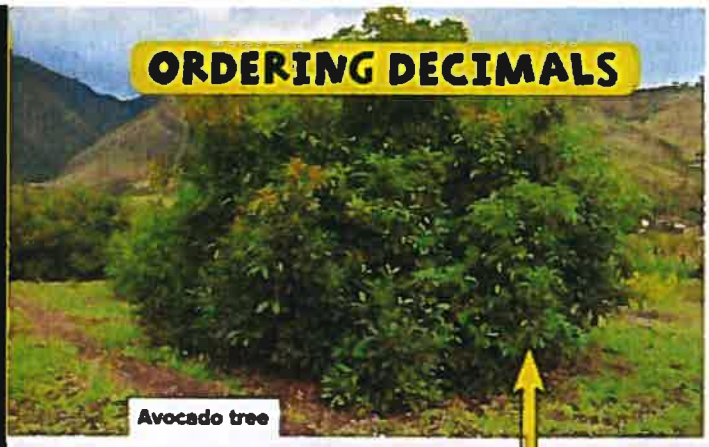


◀ NAME: Redbay ambrosia beetle
ACTUAL SIZE: Abraham Lincoln's nose on a penny
VICTIM: Trees in the Lauraceae family, including avocado and sassafras trees

▶ NAME: Emerald ash borer
ACTUAL SIZE: Width of a pencil eraser
VICTIM: Ash trees throughout much of the U.S.

Beetle Battle

Meet the people going to war against forest-killing beetles

America's forests are under siege. The culprit? Billions of beetles, many of which are no bigger than a grain of rice. The insects burrow into trees and kill them by cutting off their food and water supply. (But not all beetles do this. For more info, see "All About Beetles" on page 10.)

Some tree-killing beetles are invasive species. This means they arrived in the United States from somewhere else. With no known predators in their new habitat, they can cause damage.

Other beetles are native to the U.S., but warmer weather patterns in recent years have led to a dangerous growth in their populations.

From developing an insect repellent for trees to importing beetles' natural predators, scientists are battling tree-killing beetles in creative ways.

Appetite for Avocado Trees

Jason Smith's biggest enemy is very, very tiny. The scientist at the University of Florida studies the redbay ambrosia beetle.

This invasive species has killed more than 500 million trees in the U.S. since 2002. "It's an epidemic," he says.

Jason Smith

▶ NAME: Mountain pine beetle
ACTUAL SIZE: Point of a pencil
VICTIM: Pine trees in the western part of North America

▲ NAME: Southern pine beetle
ACTUAL SIZE: Height of 3 stacked credit cards
VICTIM: Pine trees in the southern part of the U.S.

Redbay ambrosia beetles are native to Southeast Asia. There they eat dead trees. But in the U.S., they've been attacking live trees. The beetles reproduce at lightning speed. The offspring from just one beetle can infest and injure a tree in just three weeks.

Recently, redbay ambrosia beetles have begun to attack avocado trees. Smith estimates that the beetles have killed about 30,000 avocado trees in Florida since their arrival in 2002. If the beetle reaches California, the effects could be devastating. California farms produce 90 percent of the avocados grown in the U.S.

Smith is testing a special bug spray to keep the beetles off healthy trees. Farmers are also training dogs to sniff out infected trees. Then the farmers can dig up and destroy the diseased trees to stop the infection from spreading. So far, success has been limited. "It's a complex problem," Smith says.

Hunting for Predators

Vanessa Lopez loves talking about beetles. "They're my favorite animals!" she says. Lopez is an entomologist, or person who studies insects. She works for the U.S. Forest Service studying invasive beetle species.

Vanessa Lopez

Lopez and other scientists have been studying the emerald ash borer for a number of years. It's been killing ash trees all over the U.S. since it came from Asia in 2002.

Attempts to get rid of the pest have failed so far. So the U.S. government has imported four wasp species from Asia that eat only the emerald ash borer.

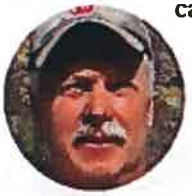
Scientists have to be careful when considering whether to introduce a new species. They must run tests to make

continued on page 10 →

sure the species won't alter the ecosystem. "Before we can release any natural enemy, we have to make sure it only attacks the insect we're targeting," Lopez says.

Small Successes

Not all beetle problems are caused by invasive species. Scientist Robert Rabaglia studies native insects with the U.S. Forest Service.



Robert Rabaglia

Some, like the mountain pine beetle, have killed more than 20 million acres of trees across the West from 2000 to 2014. "There is only so much you can do when there is an outbreak," he says.

But with dedicated forest management, it's possible to make the outbreaks less severe. That has been the case with the southern pine beetle, which lives in the southeastern United States.

These beetles prey on weak trees. Since 2003, the Forest Service has partnered with landowners to cut down weak trees, so that the remaining trees can grow stronger and healthier. "Keeping trees healthy is the best way to prevent an outbreak," Rabaglia says.

—Alexa Kurzius

MATH TALK: What are some situations in which insect scientists might work with fractions and decimals?

ALL ABOUT BEETLES

There are more known species of beetles than any other group of organisms on Earth. Scientists estimate that there are more than 1 million beetles species!

Beetles are insects, so each has a head, a thorax, an abdomen, and six legs. Beetles have two set of wings. Their hardened front wings protect their delicate hind wings.

Beetle species can range in size from 0.3 millimeters to 167 millimeters in length, like the titan beetle below.

Beetles play an important role in the ecosystem. Most of them feed on plants and plant waste, including tree wood.

Many beetles eat other insects too. Ladybugs are one example. They eat insects that damage plants.

167 millimeters (6.6 inches)

◀ The titan beetle (shown at actual size)

ORDERING DECIMALS

EXPLORE ONLINE: SKILLS SHEETS VIDEO

What to Do

DECIMALS are numbers that include a fraction of a number.

EXAMPLE:

Which number has the lowest value: 3.211, 3.2, or 3.21?

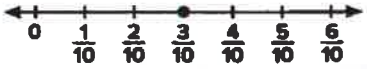
You can use a **place value chart** to compare decimal numbers. Make sure to add zeros so the numbers are all the same length.

ONES	.	TENTHS	HUNDREDTHS	THOUSANDTHS
3	.	2	1	1
3	.	2	1	0
3	.	2	0	0

Moving from left to right, we can see that 3.200 is the smallest number. We know this because the hundredths place is greater for the other numbers.

Now You Try It

1A. A student draws the following number line with fractional values to show the length in centimeters of a mountain pine beetle. Express the number on the number line as a decimal.



B. Southern pine beetles are 0.40 centimeters long. Plot this value on the number line. Is it longer or shorter than the mountain pine beetle?

C. Use decimal fractions to write a number sentence with an inequality symbol comparing the lengths of both beetles.

2A. A scientist collects 3 redbay ambrosia beetles that measure the following lengths in centimeters: 19 hundredths, 201 thousandths, 2 tenths. On a separate sheet of paper, draw a place value chart with these numbers in decimal form.

B. Which beetle is the largest?

3A. Ladybugs are a common type of beetle. They can range in length from 0.70 cm to 1 cm. On your separate sheet of paper, create a number line for the range 0.50 to 1.

B. A scientist collects 4 beetles that measure 0.85 cm, 0.75 cm, 0.60 cm, and 0.51 cm. Plot these numbers on the number line. Which of these fall into the size range of ladybugs?

4 The largest titan beetle ever measured was 16.7 cm long. Four other titan beetles have the following measurements: Beetle A is 16.46 cm long, beetle B is 15.79 cm long, beetle C is 16.07 cm long, and beetle D is 16.305 cm long.

A. Order the four other beetles from shortest to longest.

B. Which beetle is closest in length to the longest titan beetle ever measured?

5 Adult *Goliathus goliatus* beetles measure a maximum of 11 cm. Their larvae can measure a maximum of 11.5 cm. Which goliath beetle specimens in the chart could not be adult beetles? Explain your reasoning.

GOLIATH BEETLE SPECIMEN LENGTH
SPECIMEN A: 11.45 CM
SPECIMEN B: 10.208 CM
SPECIMEN C: 10.9 CM
SPECIMEN D: 11.230 CM
SPECIMEN E: 9.07 CM

Fungus spread by exotic beetle killing Everglades trees, adding to Fla's invasive species woes

July 25, 2014, at 5:21 a.m.

More

U.S.News & WORLD REPORT

Deadly fungus spreads in Everglades, killing trees

More

A dead tree stands beside a highway near Miami in the Florida Everglades. A fungus that follows an invasive beetle from Asia is killing trees across the Everglades, and there's no way to stop the blight from spreading. Since first detected west of Miami 2011, laurel wilt has killed swamp bay trees scattered across 330,000 acres of the Everglades, a roughly 2 million-acre system of state and federal lands. (AP Photo/J Pat Carter)

The Associated Press

Associated Press

MIAMI (AP) — A fungus carried by an invasive beetle from southeast Asia is felling trees across the Everglades, and experts have not found a way to stop the blight from spreading.

Then there's a bigger problem — the damage may be leaving Florida's fragile wetlands open to even more of an incursion from exotic plants threatening to choke the unique Everglades and undermine billions of dollars' worth of restoration projects.

Since first detected on the edge of Miami's western suburbs in 2011, laurel wilt has killed swamp bay trees scattered across 330,000 acres of the Everglades, a roughly 2 million-acre system that includes Everglades National Park. The fungus is spread by the tiny redbay ambrosia beetle, which likely arrived in this country in a shipment of wood packing material.

The same fungus also plagues commercial avocado trees and redbay trees elsewhere in Florida and the Southeast. While the state has been working with the avocado industry to mitigate the damage, there's been no way to contain it in swamp bay or redbay trees. Experts say the best defense would be stopping invasive pests from crossing U.S. borders in the first place.

Hundreds of millions of redbay trees have succumbed across six states since 2002, said Jason Smith, an expert in forest pathology at the University of Florida.

"It's amazing how much of an impact this one little tiny beetle that's no bigger than Lincoln's nose on a penny has done," Smith said in a recent interview. "And it continues to spread."

This summer, Smith will survey the national park for living swamp bay trees to collect samples in the hopes of propagating new trees resistant to the pathogen from their cuttings or seeds. The South Florida Water Management District, the state agency that oversees Everglades restoration, also plans to ramp up its monitoring and maintenance of the tree islands where swamp bays are found.

The damage is easily spotted from the air and from the highway that cuts across the Everglades. Gray skeletons of swamp bays that died in the pathogen's first wave and newly dead trees that have turned dry and brown mar the dark green tree islands that dot the vast expanse of pale sawgrass.

Each tree island is losing up to half its tree canopy, said LeRoy Rodgers, the water management district's lead invasive species biologist.

That's worrisome because invasive plants may work their way into those open spaces — like weeds in a garden, but worse.

Old world climbing fern, melaleuca, Australian pine and Brazilian pepper are the invaders that particularly worry state and federal caretakers of the Everglades. Like the invasive Burmese pythons that are blamed for dramatic drops in the populations of native mammals in the wetlands, the plants have established a home in South Florida's sunny and wet climate.

The exotic plants can transform sawgrass prairies into impenetrable thickets, and they fuel explosive fires that kill native plants adapted for less intense burns. They're not a food source for native wildlife, and in coastal areas, their roots can disrupt the nests of endangered sea turtles. They're so tenacious and difficult to remove that even if Smith finds a way to propagate swamp bays to replace the ones lost, the invasive plants could prevent them from taking root.

"We already have these problems with invasives that are almost too daunting. When you add laurel wilt to the mix, it's only going to get worse," said Tylan Dean, chief of biology at Everglades National Park.

Nonnative plants currently comprise 16 percent of the flora in the Everglades, according to a congressionally mandated restoration progress report published last month by the National Research Council.

Billions of dollars have been pledged for Everglades restoration projects that span decades, but those funds are mostly focused on restoring a more natural flow of freshwater through the wetlands south to the Florida Keys.

In spite of the disturbances they cause, invasive species haven't been factored into Everglades restoration planning beyond treating invasive plants that spread during construction, and there's little funding or manpower available to fight them back, according to the report.

"In Everglades restoration, we have a mantra: we want to get the water right," Rodgers said. "But if we cannot deal with the invasive species, we can get the water right but not get the Everglades we thought we were getting."

Follow Jennifer Kay on Twitter at www.twitter.com/jnkay .

Tags: Associated Press

UTILITY ADVISORY BOARD
APPOINTMENT BALLOT

Openings: One (1) Opening

Applications: Two (2) Applications

PLEASE INITIAL YOUR SELECTION

NAME OF APPLICANT	Comm. Arreola	Comm. Hayes-Santos	Comm. Simmons	Mayor Poe	Comm. Johnson	Comm. Ward	Comm. Warren
Miles, Carla (11/15/18 – 3/3/2020)							
Rockwell, Tim (11/15/18– 3/3/2020)							
READVERTISE FOR ADDITIONAL APPLICANTS							

City of Gainesville

UTILITY ADVISORY BOARD

BOARD DETAILS

OVERVIEW

SIZE 7 Seats

TERM LENGTH 4 Years

TERM LIMIT 3 Terms

(7-members; 4-year terms) (Initial terms: three (3) two-year terms to expire March 3, 2018 and four (4) four-year terms to expire March 3, 2020.) All voting members permanent residence shall be within the utility service area and receive utility service. A minimum of one voting member shall reside outside the Gainesville city limits. Applicants with any of the following types of experience are encouraged to apply for a voting member seat:
(1) experience as a utility demand customer;
(2) experience as a utility service provider
(3) investment banking, financial or certified public accounting experience;
(4) experience in energy and water conservation
(5) experience with business, contract or corporate law experience, or contract administration or;
(6) engineering experience
The City Commission may appoint voting members with any qualifications or experience the City Commission deems relevant or beneficial to service on the utility board.

Non-Voting Members. The Alachua County Board of County Commissioners and the Alachua County School Board may each appoint one non-voting member to the utility board, subject to the approval of the city commission. Non-voting members shall have the same rights and privileges as voting members, except non-voting members shall not make motions or vote on motions under consideration.
Created by Ordinance 140384 (November 19, 2015); amended by Ordinance 170808 (August 2, 2018)

The Utility Advisory Board is hereby created as an advisory board to advise and make recommendations the City Commission regarding all matters of utility governance of the city's electric, gas, telecommunications, water and wastewater utilities.

DETAILS

ORDINANCE

www.cityofgainesville.org

Ordinance 170808

City of Gainesville

UTILITY ADVISORY BOARD

BOARD ROSTER

*VACANT *VACANT

Appointing Authority City Commission

1st Term **N/A - Mar 03, 2020**

MARY C ALFORD

Appointing Authority City Commission
Position Chair

1st Term **Feb 18, 2016 - Mar 03, 2020**

Email: mary.alford@sustainabledesigngroup.com
352-317-4480
352-339-3899 x4

MICHAEL A SELVESTER

Appointing Authority City Commission
Position Vice-Chair

1st Term **Feb 18, 2016 - Mar 03, 2020**

Email: michaelselvester@gmail.com
727-608-8734

WES WHEELER

Appointing Authority City Commission

1st Term **Mar 04, 2018 - Mar 03, 2022**

Email: wes@wheelerandtraviss.com
Home: (352) 222-3722
Address:
4728 NW 37th Way
Gainesville , FL 32605

WENDELL A PORTER

Appointing Authority City Commission

1st Term **Mar 04, 2018 - Mar 03, 2022**

Email: waporter@ufl.edu
Home: (352) 332-7848
Home: (352) 514-6951
Address:
11019 NW 11th Avenue
Gainesville, FL 32606

BARRY JACOBSON

Appointing Authority City Commission

1st Term **Mar 04, 2018 - Mar 03, 2022**

Email: barry@solarimpact.com
Mobile: (352) 281-5946
Home: (352) 336-8234
Address:
2436 NW 37th Ter
Gainesville, FL 32605

VACANCY

Profile

Carla
First Name

S
Middle Initial

Miles
Last Name

carlalewismiles@gmail.com
Email Address

918 NE 18th Street
Street Address

Suite or Apt

Gainesville
City

FL
State

32641
Postal Code

Ward

☑ District 1

Home: (352) 225-5939
Primary Phone

Mobile: (352) 519-2980
Alternate Phone

Alachua Habitat for Humanity
Employer

Neighborhood Revitalization Coordinator
Job Title

Which Boards would you like to apply for?

Utility Advisory Board: Submitted

Primary Phone Type

☑ Home

Alternate Phone Type

☑ Cell

Interests & Experiences

Why are you interested in serving on a board or commission?

As a Community leader I would like to advocate for the issues that effect my community. As a board member, I could bridge a gap between the Utility company and the residents that they serve.

Carla_s_Resume.docx
Upload a Resume

Please upload a file

Demographics

Ethnicity

☑ African American

Gender

☑ Female

Are you a City of Gainesville Employee?

○ Yes ◉ No

Are you a City of Gainesville Intern?

○ Yes ◉ No

Are you currently on a City Advisory Board/Committee?

◉ Yes ○ No

Wild Spaces Public Places Citizen Oversight

If yes, which Advisory Board/Committee?

CARLA S. MILES

CSHAWNTRELLEWIS@GMAIL.COM
♦ 918 NE 18th Street Gainesville, FL 32641 ♦
352-519-2980

Objectives

A strong communicator and avid community activist with an AS Degree in Allied Health. I am seeking to use my knowledge of community building and experience in program development to engage different urban communities in adapting to a new culture of neighborhood revitalization.

EDUCATION

City College
December 2016 AS Degree Allied Health
Medical Assistant Certification
- Suma Cum Laude

EXPERIENCE

Southeastern Integrated Medical Urology ♦ 1179 NW 64th Terr Gainesville
Medical Assistant Jan 2017 – Current

Duties Include
Utilizing excellent customer service skills to deliver quality patient care, while also doing the following: Maintaining Surgeon's schedule and daily clinical operations. Assisting surgeon with clinical procedures such as biopsies and cystoscopies. Administering medications. Patient Education. Administrative duties such as Electronic Health Record maintenance. Data Entry.

Greater Duval Neighborhood Association
Secretary/Program Developer June 2013 – Current

Duties Include
Taking meeting minutes and keeping a permanent and accurate record of what has taken place in meetings. Preparing written minutes for the board of directors.

Providing needed information to the President. Receiving and sending all correspondences concerning the association. Preparing upcoming meeting notices. Keeping accurate member information. Fiscal responsibilities in conjunction with Association's President and Treasurer, including signing requisitions for disbursement from the Greater Duval Neighborhood Association Treasury and maintaining a file of receipts and disbursements. Encouraging and assisting all committees in the development of their programs and performance of their duties. Engaging resident participation in programs and services.

SKILLS

- Customer Service
- Advocacy
- Typing, Data Entry Spreadsheets, Record Keeping
- Multi-line Phone System
- Communication
- Nursing, Phlebotomy, Medical Records

Profile

Tim
First Name

A
Middle Initial

Rockwell
Last Name

tarsnewthing@hotmail.com
Email Address

3212 NW 25TH TER
Street Address

Suite or Apt

Gainesville
City

FL
State

32605
Postal Code

Ward

☑ District 2

Home: (352) 792-4332
Primary Phone

Home: (352) 373-3541
Alternate Phone

eda engineers surveyors planners
Employer

Production Manager
Job Title

Which Boards would you like to apply for?

Utility Advisory Board: Submitted

Primary Phone Type

☑ Cell

Alternate Phone Type

☑ Office

Interests & Experiences

Why are you interested in serving on a board or commission?

I have worked in civil engineering and planning in the City of Gainesville and Alachua County for over twenty years. I have first hand experience designing utility services and the unique challenges faced by the concerned parties with conflicting interests in the land development industry. I am particularly interested in design standards and how we communicated design information to contractors.

T._Rockwell_Resume.pdf
Upload a Resume

Please upload a file

Demographics

Ethnicity

☑ Caucasian/Non-Hispanic

Gender

☑ Male

Are you a City of Gainesville Employee?

○ Yes ○ No

Are you a City of Gainesville Intern?

○ Yes ○ No

Are you currently on a City Advisory Board/Committee?

○ Yes ○ No

If yes, which Advisory Board/Committee?

Young, Shaneka

From: Tim Rockwell <trockwell@edafl.com>
Sent: Thursday, October 11, 2018 3:19 PM
To: citycomm
Subject: Utility Advisory Board

Dear Mayor Poe and City Commissioners,

I am writing to inform the Commission that I have applied to the Utility Advisory Board and to express my sincere hope that you will consider my appointment to this board. I have over twenty years of experience working in land planning, civil engineering and utility service design. I have worked closely with GRU on many projects in the City and County and am keenly aware of the difficulties and competing interests involved in the land development industry.

Of particular interest to me are the following topics:

- The ongoing urban standards initiative.
- Expanding GRUCOM services through the City/County.
- How design information is presented on construction plans for contractors.
- The role GRU plays (or could play) in affordable housing.

In addition to my professional experience, I currently chair the County Planning Agency/Planning Commission and am vice chair of the County Affordable Housing Committee. As such, I am very familiar with how citizen advisory boards operate.

Please do not hesitate to contact me if you have any questions for me. I would be happy to meet or discuss the board position at a public meeting if that is appropriate.

Thank you for your consideration.

Tim Rockwell | Production Manager |
| eda engineers-surveyors-planners, inc. |
2404 NW 43rd Street | Gainesville, Florida 32606
352 373 3541 | trockwell@edafl.com | www.edafl.com

Tim Rockwell, Jr.
Project Coordinator

Total Years Experience
17

Years with **eda**
15

Education

1989-1990 Certified in Computer Drafting and Design Technology
St. Augustine Technical Institute

2003-2006 Associate of Applied Science Degree
Santa Fe Community College

Chronology

2014-Present Production Manager
eda engineers • surveyors • planners, inc.

2010-2014 Project Coordinator / CAD Manager
Eng, Denman & Associates, Inc.

2008-2010 Entry Level Design Engineer
Bohler Engineering

1999-2008 Project Coordinator / CAD Manager
Eng, Denman & Associates, Inc.

Prior to 1999, Mr. Rockwell worked as a residential draftsman for various construction companies throughout Florida.

Professional Experience

Mr. Rockwell has worked in Computer Aided Drafting and Project Coordination in the Civil Engineering and Construction industries for over twenty years. His current experience includes performing site research and producing initial site designs and conceptual layouts as well as producing complete development plan packages for small commercial sites and large-scale commercial and residential developments.

Areas of Expertise

Mr. Rockwell's specializations include AutoCAD, Civil 3D, Land Development Desktop and Eagle Point software packages for producing civil construction plans, CAD management, zoning and land use research, commercial and residential site design, conceptual layouts, project coordination and submittal packages.

eda 40 years
engineers • surveyors • planners
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Gainesville, Florida 32606
Phone: 352-373-3541
Fax: 352-373-7249
Email: trockwell@edafl.com