From UT, Recent Graduate’s Discovery Sheds New Light on Newborn Stars

By Christine Billau

Making her dreams come true, a recent graduate of The University of Toledo’s physics program is in the midst of a sky-rocketing year. Dr. Nicole Karnath earned her Ph.D. last summer and quickly moved to California to serve as instrument scientist at the SOFIA Science Center, which is based in NASA Ames Research Center, where she flies regularly aboard the world’s largest airborne observatory.

On top of her already soaring career success, last week the Astrophysical Journal published Karnath’s research completed while she was a UT student, sharing her discovery that reflects a new understanding of what happens at the early stages of star formation.

She credits her student research and the support of her advisor, Dr. Tom Megeath, UT astronomy professor, for the job offer from NASA before she had her diploma.

“I am very happy. I enjoy the science, and I love studying the universe,” Karnath said. “Astronomy is an international, collaborative field because we’re working on telescopes all over the world and taking in huge amounts of data. The opportunities are there for students to break in. UT astronomy professors know so many people all over the world. Take advantage of their expertise, connections and need for help analyzing data. That’s how I ended up here.”

“Nicole made one of the most exciting discoveries to come out of our UT star formation group,” Megeath said. “Just as a talent agent’s biggest dream is to find the actor or actress who will become the next star, for an astronomer, the dream is to find the blob of gas that’s in the process of becoming a star. Nicole has found four such blobs — collapsing gas clouds that are in the first 6,000 years of forming what is called protostar. In ‘star years,’ this is the first 30 minutes of their lives.”

While a graduate student at UT, Karnath was part of an international team of astronomers who used two of the most powerful radio telescopes in the world to create more than 300 images of planet-forming disks around very young stars in the Orion molecular clouds.

UT Law Student Becomes First Black Editor-in-Chief of 52-Year-Old Law Review

Second-year law student Damon Williams made history as he was selected to be the next leader of The University of Toledo Law Review.

Williams will be the first black student to hold the prestigious position of editor-in-chief in the publication’s 52-year history when his term begins later this year.

“I am extremely grateful for the opportunity that I have been afforded,” Williams said. “Becoming the first editor-in-chief with African-American heritage is an amazing milestone, and I am beyond honored.”

The law review, which was first published at the UT College of Law in 1969, is a student-run journal written by law professors, judges and students.

“I am delighted that Damon was selected as editor-in-chief of The University of Toledo Law Review,” D. Benjamin Barros, dean of the College of Law, said. “He’s exceptionally bright and will be an excellent leader. Although we wish this milestone would have happened sooner, his selection is encouraging as it reflects progress.”

“This is but a step in what I hope to be a continuing process for UT,” Williams said. “I am striving to help foster subsequent diversity milestones and continued Law Review success, and I look forward to my future collaboration with community members.”

FLYING HIGH: Dr. Nicole Karnath, UT alumna and instrument scientist at the SOFIA Science Center in California, stands in front of SOFIA, the world’s largest airborne observatory.

UT, Newslett...
**Sustainability Efforts on Campus to be Discussed Feb. 26**

A sustainability forum will be held Wednesday, Feb. 26, at 6:30 p.m. in Memorial Field House Room 2100.

"The purpose of the Earth Rally is to get feedback from students, faculty and staff about sustainability and what the University can do to improve its initiatives," said Grant Epstein, campus culture chair with Student Government.

Discussing UT’s efforts to reduce its carbon footprint will be Jason Toth, senior associate vice president for administration; Michael Green, director of energy management; and representatives from several student organizations.

"When I joined Student Government, one of the changes I wanted to see on campus was making the University more sustainable," Epstein said.

The sophomore majoring in mechanical engineering is a member of the Student Green Fund, which is made possible by voluntary student donations and finances student-proposed and executed projects that promote sustainability, renewable energy, efficiency, waste reduction and educational initiatives.

Thanks to the Student Green Fund, there is a solar field on Health Science Campus, and there are water bottle filling stations and air dryers throughout the University.

"While efforts continue to make the University more sustainable, it’s important to inform people about what UT is doing and receive feedback from campus community members," said Epstein, who is a member of Kappa Delta Rho Fraternity.

"We have installed motion-sensor lighting controls in many buildings, and our exterior lighting is 89% LED," Green said. "In addition, our recycling system is more efficient and effective."

"Facilities and Construction is supportive of striving to improve sustainability on our campuses," Toth said. "We look forward to continued opportunities to implement sustainable systems and also to work with our students, faculty and staff on future initiatives."

Future sustainability initiatives will be discussed at the forum.

For more information on the free, public forum, contact Epstein at grant.epstein@rockets.utoledo.edu.

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**Recycle Right: Review Updated Guidelines**

By Christine Wasserman

As the University continues its efforts to reduce waste to help the environment while also reducing escalating costs associated with recycling, employees and students are urged to use the multi-stream recycling stations located throughout campuses.

"As we work to increase everyone’s awareness of how to recycle appropriately, we really need to emphasize that every single person on our campuses shares this responsibility," said Michael Green, director of energy management. "The University can’t make a dent with these efforts unless everyone is accountable, and for many of us that means changing our daily habits."

How to reduce waste and recycle items properly is of the utmost importance, he said.

"Because what communities and businesses recycle has changed over the years, it’s important that you review this information on a regular basis so you’re in tune with what now may be recycled," Green explained. "For instance, we were told previously not to recycle empty aerosol cans or caps on plastic bottles, but now both of these items can be recycled."

To help ensure you’re up-to-date on how to recycle, review these general guidelines:

- Do recycle plastics used for water and pop bottle containers (along with their caps), and many types of food containers. Be sure containers are empty and rinsed so they are free of food.
- Do recycle plastic containers used for milk, juice, detergents, bleach and most hair-care products (for example, shampoos and conditioners). However, rinse them out before recycling.
- Do recycle paper grocery bags, office paper, junk mail, envelopes (even if they have windows), empty cardboard toilet paper and paper towel rolls, and gift-wrapping paper (unless tin foil paper).
- Do recycle tissue boxes; however, first remove the plastic insert at the top of the box, which is not recyclable.
- Do recycle tin and aluminum cans, including empty aerosol cans and their caps. If the cans have been used for food, empty and rinse first.
- Do not recycle plastics used for packaging materials, including packing peanuts, drinking straws, pipes, plastic furniture and most toys. These can be dangerous to the planet and also pose a health risk.
- Do not recycle Post-it notes, padded bubble envelopes, greasy pizza boxes or foil food packaging (for example, pouches used for certain baby foods and pet treats).
- Do not recycle Styrofoam cups and containers, hand soap dispenser tops and pumps, disposable coffee cups, plastic wrap and plastic grocery bags.
- At home or at a community recycling station, you also may recycle green, brown and clear glass bottles. However, do not recycle glass cookware, wine glasses, window glass or mirrors.

"If you’re ever in doubt whether a particular item can be recycled, read the labels that are on top of UT’s blue recycling bins," Green recommended. "There also are signs posted at community recycling stations, making it easy to recycle."

If you still do not find the information you need, however, it’s better to toss an item into the trash instead of risking cross-contamination by recycling the item incorrectly, Green noted. When cross-contamination occurs, that bin’s entire contents ends up in a landfill.

For more information about recycling, visit the Office of Sustainability website at utoledo.edu/sustainability/recycle.html.
Newborn Stars

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Pointing both the Very Large Array (VLA) and the Atacama Large Millimeter/submillimeter Array (ALMA) to the region in space where many stars are born, the result is the largest survey to date of young stars, called protostars, and their protoplanetary disks, or planets born in rings of dust and gas.

Among the hundreds of survey images, four protostars looked different than the rest and caught Karnath’s attention.

“These newborn stars looked very irregular and blobby,” Karnath said. “We think that they are in one of the earliest stages of star formation and some may not even have formed into protostars yet.”

It is significant that the scientists discovered four of these objects, which Karnath estimates to be younger than 10,000 years old.

“We rarely find more than one such irregular object in one observation,” said Karnath, who used these four infant stars to propose a schematic pathway for the earliest stages of star formation.

To be defined as a typical protostar, stars should not only have a flattened rotating disk surrounding them, but also an outflow — spewing away material in opposite directions — that clears the dense cloud surrounding the stars and makes them optically visible. This outflow is important because it prevents stars from spinning out of control while they grow. But when exactly these outflows start to happen is an open question in astronomy.

One of the infant stars in this study, called HOPS 404, has an outflow velocity of only 2 kilometers per second, or 1.2 miles per second. A typical protostar outflow has a range of 10 to 100 kilometers per second, or 6 to 62 miles per second.

“It is a big fluffy sun that is still gathering a lot of mass, but just started its outflow to lose angular momentum to be able to keep growing,” Karnath said. “This is one of the smallest outflows that we have seen, and it supports our theory of what the first step in forming a protostar looks like.”

“These very young protostars don’t match existing theory very well, meaning that we still have a lot to learn from future studies,” Megeath said.

Karnath’s stellar work continues in California at the SOFIA Science Center. SOFIA is a flying observatory made out of a modified Boeing 747, capable of making observations that are impossible for even the largest and highest ground-based telescopes.

SOFIA, which stands for Stratospheric Observatory for Infrared Astronomy, is a partnership of NASA and the German Aerospace Center and under contract with the Universities Space Research Association.

As an instrument scientist, Karnath is responsible for one of five instruments rotated on and off the telescope on the plane, depending on the type of data astronomers are looking to gather.

“I work on an instrument called FORCAST. It’s an imaging instrument and also a spectrometer,” Karnath said. “I’m up there making sure we’re getting the filters needed or the different wavelengths, or looking at a certain target for the right amount of time, and also troubleshooting issues.”

Karnath also is using SOFIA to continue her own research. She submitted a proposal and was awarded observation time on SOFIA scheduled for February 2021.

The curiosity and determination that first fueled her journey as a little girl still powers this successful woman in science today.

“My dad was an amateur astronomer who had a telescope and regularly had me looking at Saturn or a meteor shower,” Karnath said. “I thought astronomy was the most fascinating subject I ever studied. In high school I enjoyed physics and learned that you could make a living off of this. I never looked back, and I’m so lucky that I still love it.”

Karnath said she couldn’t have accomplished so much so soon without the support of Megeath, the UToledo astronomy program, and past advisors at Lowell Observatory and Ohio State University.

“The best part of my job is handing over astronomical data from a cutting-edge observatory, such as the Spitzer Space Telescope, Hubble Space Telescope, ALMA, or the Lowell Discovery Telescope, to a graduate student and seeing the discoveries they make from the data. They never know exactly what they will find,” Megeath said.

“In Nicole’s case, she did an extraordinary job working with an international team spanning three continents and involving universities and institutes across the U.S., Chile and Spain. She combined data from two of the most powerful radio telescopes on Earth to discover these objects. The exciting part is that every discovery brings new mysteries to solve.”

Prior to UToledo, Karnath earned a master’s in applied physics from Northern Arizona University and a bachelor’s in physics and astronomy from Ohio State University.

UToledo is a member of the Association of Universities for Research in Astronomy, a prestigious consortium of 67 U.S. institutions and three international affiliates that operates world-class astronomical observatories for the National Science Foundation and NASA.
Battle of Badges Game to Follow Men’s Basketball Contest Feb. 29

By Steve Easton

Rocket fans can support the city of Toledo’s Fire and Police departments in the second annual Battle of the Badges basketball game that will be played in Savage Arena following The University of Toledo men’s basketball contest vs. Ball State Saturday, Feb. 29, at 2 p.m.

Fans can purchase tickets for the Rockets’ game vs. the Cardinals for $11 by going to utrockets.com/police or utrockets.com/fire and watch the Battle of the Badges.

Tickets may be purchased online at utrockets.com/tix, by calling 419.530.GOLD (4653), or visiting the Rocket Athletic Ticket Office in Savage Arena.

Five dollars from every ticket sold will go toward each organization’s charity. The fire department is donating to Toledo Firefighters’ Local 92 Charity, while the police department is contributing to the Toledo Police Patrolman’s Association.

PLAY ON: This group photo was taken last year at the inaugural Battle of the Badges game.

Celebrating Year of the Rat

Rui Liu taught students how to make a Chinese knot last week at the Chinese New Year Spring Festival. Hundreds stopped by the Thompson Student Union Auditorium Feb. 18 to celebrate the Year of the Rat.

Alex Brough Suter learned the art of Chinese mask painting at the festival. The annual event was sponsored by the UToledo Confucius Institute.

Farzana Qurban Ali, a senior majoring in biology, showed her Chinese lantern design she created at the event. She is president of the International Students Association.

Photos by Xinren Yu
Focus on Nature: Winners of Lake Erie Photo Contest Announced

A total of 135 spectacular shots were submitted for the 10th annual Lake Erie Photo Contest.

Winners in three categories were announced last month during a ceremony at the Lake Erie Center.

The contest’s theme, “The Nature of Our Region: From Oak Openings to Maumee Bay,” invited photography enthusiasts to submit up to three shots featuring nature scenes throughout northwest Ohio.

First-place winners received a $25 prize, and the best of show honoree took home $100. Entries are on display in the lobby of the Lake Erie Center.

Listed by category, the winners are:
- **Best of Show** — Eric Crowther;
- **Adult** — Phil Cogar;
- **Teen (13 to 18 years old)** — Eric Crowther; and
- **Youth (7 to 12 years old)** — Jessica Watts.

“We look forward to seeing the amazing submissions for this contest every year,” said Rachel Lohner, education program manager for the Lake Erie Center. “Local photographers explore our wonderful region and capture cool aspects of nature to share.”

Eric Crowther won Best of Show for this photo of a great blue heron.

Phil Cogar took top honors in the adult category with this shot.

Eric Crowther also won first place in the teen category with this photo of a muskrat.

Jessica Watts placed first in the youth category with this photo taken at Maumee Bay State Park.
Employees: Winter Break Dates Posted to Allow Planning for Holidays

By Christine Wasserman

The University again will be closed for winter break this year to enable eligible employees extra time off to enjoy the holidays with family and friends.

“We’re very pleased to be able to continue offering winter break because it contributes to our employee’s health and well-being,” said Wendy Davis, associate vice president and chief human resources officer. “Winter break also has become yet another important differential in attracting exceptional new talent because most area employers are unable to offer such a generous time-off benefit.”

To help faculty and staff plan in advance to make the most of their holidays, the following winter break schedule is being announced:

- Thursday, Dec. 24 — Holiday (Columbus Day);
- Friday, Dec. 25 — Holiday (Christmas);
- Monday, Dec. 28 — Paid day off provided for winter break;
- Tuesday, Dec. 29 — Paid day off provided for winter break;
- Wednesday, Dec. 30 — Paid day off provided for winter break;
- Thursday, Dec. 31 — Paid day off provided for winter break; and
- Friday, Jan. 1 — Holiday (New Year’s Day).

In addition to existing holiday pay, UT offers paid days off, as designated above.

During winter break, certain essential services must still be provided on campus, such as hospital operations at UTMC, approved research activities and public safety. Therefore, winter break does not include UTMC employees nor certain required positions, which might vary annually depending on need.

If you work in an area that must continue providing essential operations during winter break and are in a collective bargaining unit requiring vacation planning, your supervisor soon will advise you if you may need to work.

Much more information, including frequently asked questions, is available at utohio.edu/depts/hr/benefits/time-off/winter-break.html. If you have any questions after reviewing these details, contact your Human Resources consultant.

UToledo Benefits and Wellness Increasing Programming, Mental Health Resources

By Christine Wasserman

The University of Toledo is committed to offering innovative programs that make an impact on employees’ health and well-being.

Throughout 2020, UToledo benefits and wellness will host the Be Well series, designed to provide eligible employees practical information on their benefits and how to use them wisely.

“We’re pleased to offer comprehensive benefits and wellness opportunities for our employees,” said Brian Pack, director for benefits and wellness. “The benefits and wellness staff are dedicated to educating employees on the coverage levels, products and services included in their benefits package by offering new monthly lunch and learns on both our Main and Health Science campuses.”

For topics, times and locations of the Be Well series and to register, visit the Healthy U website at utoledo.edu/offices/rocketwellness/joint-program.html.

Beginning in March, another new offering for employees will be available through UToledo’s Employee Assistance Program, IMPACT Solutions. Tess is a free mental health chatbot that uses artificial intelligence to deliver on-demand and quality emotional support to boost mental health and resilience based on the emotions you express via text.

Similar to an automated self-help book, Tess simulates how a human would behave as a conversational partner and works to understand your needs by asking follow-up questions. Although Tess is not meant to replace conventional mental health counseling, it delivers mental health support to those who otherwise might not reach out for help.

“When complications arise from stress, parenting challenges or other concerns, it’s comforting to have a resource available at your fingertips,” said Vicki Riddick, senior wellness officer. “We’re proud to offer this new complimentary, confidential tool for our employees to bridge the mental health gap.”

IMPACT Solutions offers confidential support for employees and their household members, dependents living away from home, parents and parents-in-law. Their support includes phone and face-to-face counseling, as well as this new chatbot text method, Tess.

To learn more about Tess and other resources available through IMPACT Solutions, visit IMPACT Solutions’ website at myimpactsolution.com and enter UT for the username.

Many more details about UToledo benefits and wellness programs are available at the Healthy U website at utoledo.edu/offices/rocketwellness/joint-program.html and the Benefits website at utoledo.edu/depts/hr/benefits/employee-assistance.html.

UToledo Law Student

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Law Review members are selected as editor-in-chief after a highly competitive, in-depth interview process. The elections committee considers academic performance, writing ability as demonstrated by their academic writing and editing throughout the year, and leadership potential.

“From a technical perspective, Damon’s formal yet graceful writing style and his superior academic performance made him a competitive candidate among his peers,” said Lindsey Self, law student and the current editor-in-chief of The University of Toledo Law Review. “He demonstrates conviction in his vision for the journal but is unafraid to take calculated risks. Damon’s writing and leadership demonstrate a unique balance between sensibility and practicality with inventiveness and ingenuity – a balance that is difficult to find in practice, let alone law school.”

Williams, who also serves as president of the Black Law Students Association, was born and raised in Toledo. He earned his bachelor’s degree in criminal justice and master’s degree in forensic science at Bowling Green State University.

He hopes his law degree will help him facilitate the social and political changes he wants to see in the world. Although he is still figuring out his next steps, Williams is considering a federal clerkship or doctor of juridical science.

“This is much bigger than me alone,” Williams said. “I have a fantastic executive board in Hayley Mise, Cameron Morrissey, Kate Murray and Morgan Isenberg. Their continued excellence and support are essential to the success of the Law Review.

In addition, Lindsey Self has been a shining north star, guiding me toward the path to success.”
Award Nominations, Scholarship Applications Sought

The University Women’s Commission is accepting nominations and applications for its annual awards and scholarships.

Friday, March 13, is the deadline to submit nominations for the Alice H. Skeens Outstanding Woman Award.

Female undergraduates need to apply for the University Women’s Commission Scholarship by Friday, March 6.

Award recipients and three $1,000 scholarship winners will be honored at the University Women’s Commission’s Outstanding Women’s Award Ceremony Thursday, April 23, at 11:30 a.m. in the Savage Arena Grogan Room.

The scholarship guidelines and application, and the award nomination form, can be found on the University Women’s Commission website at utoledo.edu/commissions/uwc.

Award nominations should be sent to Kelly Andrews, chair of the University Women’s Commission, mail stop 302.

Scholarship applications are submitted online.

For information about the awards, contact Andrews at kelly.andrews@utoledo.edu, and for information about the scholarships, contact Terri Hayes-Lepiarz at teresa.hayes@utoledo.edu.

Check out and like the commission’s Facebook page: facebook.com/universitywomenscommission.

University Libraries Offering Workshops This Semester

From conducting research for a paper or a job search to learning more about digital publishing, University Libraries has a workshop for you.

During spring semester, University Libraries is offering workshops designed to build practical skills and improve scholarship and research habits. No need to register – just show up.

UToledo librarians are here to help undergraduate and graduate students in their research success.

One-hour workshops will be:
- Life Hacks: UToledo Libraries;
- Finding Resources Your Professor Will Love;
- Mastering Citations in EndNote;
- Scholarly Attribution and Citation;

Workshop descriptions and details can be found on University Libraries’ website at libguides.utoledo.edu/workshops.

For questions or more information, contact Julia Martin, associate professor, director of reference and instruction, and business librarian, at 419.530.2492 or julia.martin@utoledo.edu.

IN MEMORIAM

Kevin L. Bell, Toledo, a custodial worker at the Center for the Visual Arts from 2006 to 2008, died Feb. 7 at age 34.

Vanessa D. (Fulmer) Fitzpatrick, Perrysburg, a pediatric social worker at MCO from 1991 to 2000, died Feb. 11 at age 57.

Martha May (Klotz) Passalacqua, Maumee, a custodial worker at UToledo for 20 years, died Feb. 14 at age 99.

UTOLEDO NEWS

The University of Toledo is committed to a policy of equal opportunity in education, employment, membership and contracts, and no differentiation will be made based on race, color, religion, sex, age, national origin, sexual orientation, veteran status or the presence of a disability. The University will take affirmative action as required by federal or state law.
Donate Through Grubhub App to Help Feed UTToledo Students in Need

By Alexis Razo

The Office of Student Advocacy and Support has partnered with UTToledo Dining Services to take initiative in feeding UTToledo students who are food-insecure. The office already has an established food pantry and is looking to extend this initiative through the Feeding Tomorrows campaign.

“Services like the UTToledo Food Pantry are a blueprint to a golden success,” said Dr. Sammy Spann, associate vice president and dean of students. “We are honored to help those who suffer from food insecurities and provide them with the nutrition needed to help them obtain their education.”

The Feeding Tomorrows campaign allows students, faculty, staff and the UTToledo community the chance to contribute to the cause in a mobile format, allowing the initiative to reach a larger audience.

Donations may be made through the Grubhub app in the amount of $1, $3 or $5. Accepted payment methods include Dining Dollars, Rocket Dollars, credit and debit.

To view a tutorial on how to donate through Grubhub, visit utoledo.edu/studentaffairs/feedingtomorrows/howto.html.

If you would like to donate in the amount of $1, $3, $5 or a meal swipe in person, you may visit any UTToledo dining center register. Donations will be used to fund the UTToledo Food Pantry and provide food-insecure students with assistance.

“With approximately 60 UTToledo students seeking help from the food pantry every week, it is time to respond to this need in a big way,” said Cameron McAdams, dining resident district manager. “Our goal is to have students focus on their academic success without having to worry about where their next meal is coming from.”

For more information on the Feeding Tomorrows initiative, visit utoledo.edu/studentaffairs/feedingtomorrows.