

## **Student Government Resolution 122.009**

### **A Resolution Advocating for Dark-Sky Friendly Campus Lighting**

**Sponsored by Owen Hamill, Voting Senator; Kristin Stein, Associate Senator; Kennedy Cooper, President of the Student Senate; Mike Owsley, Treasurer; Alexis Cook, Secretary; Mairin Warner, Environmental Affairs Chair; and Ethan Kershaw, Voting Senator**

#### WHEREAS,

- The Student Government is the official governing body of the Student Association and exists to represent the present and long term best interest of the Student Association in the formulation of the University policy and in the fulfillment of the University's mission; and
- The Freshman Symposium (Illuminate) class based around light pollution has shown through class participation and projects that students care about the issue, and want to make changes once they learn more about light pollution<sup>1</sup>; and
- Surveys of Truman students who have never taken the class have shown that they are concerned about the effects of lighting on campus and notice the lights on campus when they don't meet their needs: 61% of students report light shines in their room at night and of those 61% of students 51% say that it disrupts their sleep. 65% of students prefer off white or orange-yellow to the current white and blue lights on campus<sup>2</sup>; and
- Light pollution is defined as “the inappropriate or excessive use of artificial light;”<sup>3</sup> and
- This definition has four parts which include skyglow, or “brightening of the sky over inhabited areas,” and light trespass, when “light (falls) where it is not intended or needed;” and
- Lights that shine into the sky increase the amount of light pollution<sup>4</sup> and are extremely energy inefficient; and
- Light pollution has many adverse effects on animal populations, and is a key factor in population and habitat loss that is often overlooked<sup>5</sup>
- Glare resulting from poorly designed lights decreases visual acuity, creating safety

<sup>1</sup> [Symposium Festival Slides 2022](#)

<sup>2</sup> [Campus Lighting Survey conducted by Dr. Gokhale's research team in Fall 2022](#)

<sup>3</sup> ["Light Pollution" \(International Dark-Sky Association, n.d.\)](#)

<sup>4</sup> ["The Color of the Light Affects the Circadian Rhythms" \(The National Institute for Occupational Safety and Health, 2020\)](#)

<sup>5</sup> [Global light pollution is affecting ecosystems—what can we do? \(United Nations Environment Programme, 2020\)](#)

- hazards at nighttime on roadways and sidewalks<sup>4</sup>; and
- Light trespass occurs in many students' dorm rooms at night. For example in Ryle Hall, the stadium lights at Stokes Stadium shine into students windows at night and make it hard to sleep<sup>6</sup>; and
  - Excess light exposure has been shown to disrupt the circadian rhythm which makes it harder to sleep at night<sup>7</sup>; and
  - Better sleep quality has been shown in numerous studies to improve mental health across the board<sup>8</sup>; and
  - Many adults aren't getting enough sleep at night<sup>9</sup>; and
  - The increasing sky glow from Kirksville and the Truman State University campus means that you have to travel further out of town to see the sky in optimal, light pollution free conditions<sup>10</sup>; and
  - Several studies have shown that more lighting is correlated with increased crime rates across the nation<sup>11</sup>; and
  - Dr. Vayujeet Gokhale has been pushing for change for years through his research group and the Freshman Symposium (Light pollution); and
  - Dr. Gokhale's efforts to change the lighting on campus have so far been in cooperation with Physical Plant, the University Farm, the Environmental Sustainability Fee Accountability Committee (ESFAC), and CrossRoadsLEDs; and
  - This effort so far has been funded by ESFAC<sup>12</sup>, but it is just a band aid solution, and it will take too long for meaningful change to occur through purely ESFAC efforts.

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<sup>6</sup> [Survey given to Truman students](#)

<sup>7</sup> ["Systematic review of light exposure impact on human circadian rhythm" \(Tähhkämö et al., 2018\)](#)

<sup>8</sup> ["Improving sleep quality leads to better mental health: A meta-analysis of randomised controlled trials" \(Scott et al., 2021\)](#)

["Human and Environmental Effects of Light Emitting Diode \(LED\) Community Lighting" \(Kraus, L. J., 2016\)](#)

<sup>9</sup> ["1 in 3 adults don't get enough sleep" \(Center for Disease Control and Prevention, 2016\)](#)

<sup>10</sup> ["Light Pollution Effects" \(Dark Sky Defenders, n.d.\)](#)

["Protect the Night" Brochure \(International Dark-Sky Association, n.d.\)](#)

<sup>11</sup> ["Lighting, Crime and Safety" \(International Dark-Sky Association, n.d.\)](#)

["Street lighting increases theft from cars, rather than deterring opportunists" \(Davis, N., 2022\)](#)

["Absence of Street Lighting May Prevent Vehicle Crime, but Spatial and Temporal Displacement Remains a Concern" \(Tompson et al., 2022\)](#)

["The effect of reduced street lighting on road casualties and crime in England and Wales: controlled interrupted time series analysis" \(Steinbach et al., 2015\)](#)

<sup>12</sup> ["Crossroads LED receives the IDA's 'Lighting Design and Technical Innovation Award'" \(Stefanoff, B., 2021\)](#)

THEREFORE BE IT RESOLVED THAT THE STUDENT GOVERNMENT,

- Requests that the lights on campus be updated as soon as possible to reflect these concerns; and
- Recommends using the International Dark Sky Association's five principles of good outdoor lighting<sup>13</sup> as the standard for updating campus lighting:
  1. Useful- Remove all unnecessary lighting that does not serve a purpose.
  2. Targeted- Shield lights so they only point into the ground to reduce glare and skyglow.
  3. Low Light Level- Lights should not be brighter than necessary.
  4. Controlled- Use controls such as timers and triggers so that lights are only on when necessary,
  5. The Appropriate Color- Use only warm colored lights or lights that are approximately 2700K or lower in temperature.

THE STUDENT GOVERNMENT DIRECTS THAT,

Additional copies of this resolution be disseminated to Sue Thomas, President; the Board of Governors; Dr. Vayujeet Gokhale, Professor of Physics; Sam Guth, Physical Plant Director; Melody Brown, Environmental Campus Organization ECO Student Contact; Lori Shook, Campus Planner; The Truman Media Network; The University Archives; and Donna Liss, Chief Information Officer.

Approved by 7-1-2 on April 2nd, 2023.



Kennedy Cooper, President of the Student Association

<sup>13</sup> ["Five Principles for Responsible Outdoor Lighting" \(International Dark-Sky Association, 2020\)](#)



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## Appendix A

Additional references:

1. [Campus inventory](#) (In progress)
2. [Survey results](#) (Specifically for students not in the Illuminate Symposium)
3. [Symposium Festival Slides 2022](#)