

# Karen Warmbein

TECHNICAL CONTENT DEVELOPER · FORMER PLANETARIUM COORDINATOR

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## Experience

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### Advanced Instructional Systems (WebAssign) and Cengage Learning

*Raleigh, N.C.*

TECHNICAL CONTENT DEVELOPER II

*Apr. 2012 - Current*

- Use Perl, JavaScript, Mathematica, and markup languages to add numerical randomizations to mathematics, statistics, physics, and astronomy questions transferred from textbook and publisher-independent materials to an online assessment system.
- Participate in a QA processes to ensure work is free of errors and aligned with pedagogical standards.
- Collaborate with agile team, including stakeholders, to accurately scope and deliver projects.
- Train and provide feedback to new hires on standard coding and pedagogical best practices.
- Create and maintain tools that automate daily work and update internal processes documentation.
- Participate in a cross-functional team whose goal is to create innovative methods of using mathematical proofs in the application.
- Past experience in Content Support Rotations: assisting the internal Content Support Team via responding to customer-reported issues such as pedagogical errors and undesirable application behavior.

### University of North Carolina, Greensboro

*Remote*

ISCHOOL COURSE DEVELOPER & LECTURER

*Sep. 2010 - May 2011*

- Assisted in the content development of AST 203: Conceptual Astronomy - an online college course for high school students - by recording lectures, creating assignments & tests.
- Guided students through the online course and regularly communicated with students, facilitators, and course coordinator.
- Experience with Pearson's MasteringAstronomy.

### Catawba Science Center

*Hickory, N.C.*

PLANETARIUM COORDINATOR & EDUCATOR

*Apr. 2010 - Jul. 2011*

- Taught science classes to Pre-K through 12th grade students, scouts, and camp participants.
- Managed administrative aspects of the planetarium and collaborated with marketing to promote events.
- Created and presented seasonal programming.
- Continued relationship with members in C.V.A.C., M.U.G., S.E.P.A, & C.A.P.E.
- Maintained equipment and software. Gained experience with MediaGlobe II and SkyLase systems.

### Abrams Planetarium

*East Lansing, MI*

WEEKEND SHOW PRESENTER

*Jun. 2008 - May 2009*

- Prepared planetarium equipment and theater for weekend shows.
- Organized and delivered a presentation of the current night sky.
- Experience with Digester II and their analog system.

### Physics/Astronomy & ISP Departments - Michigan State University

*East Lansing, MI*

TEACHING ASSISTANT

*Aug. 2006 - May 2009*

- Responsibilities varied with course and instructor, main duties as follows:
  - coordinated with instruction team and graded assessments
  - lead course discussions and guided laboratory activities
  - held review sessions and proctored exams

## Volunteer Activity

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### North Carolina Science Olympiad - Regional & State Competition

*Raleigh, N.C.*

TEST QA & EVENT LEADER

*Feb 2016, Feb - April 2017*

- QA'd the N.C. regional and state level Astronomy tests: 'Reach for the Stars' (middle school level) and 'Astronomy' (high school level).
- Lead assigned volunteers to administer & grade the tests.

## Durant Nature Preserve

*Raleigh, N.C.*

### BLUEBIRD BOX MONITOR

*Seasonal, 2014, 2016, & 2017*

- Weekly monitoring – including recording data – of the preserve’s bluebird boxes, which are located along a 2.5 mile trail.

## Catawba Valley Astronomy Club

*Hickory, N.C.*

### MEMBER & VICE PRESIDENT

*Apr. 2010 - Jul. 2011*

- Assisted with Open House Public Nights at the Lucille Miller Observatory.
- Attended monthly meetings where I was also the representative for Catawba Science Center.

## Education

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### Michigan State University

*East Lansing, MI*

#### B.S. IN ASTROPHYSICS & B.S. IN MATHEMATICS

*Jan. 2006 - May 2009*

- Astrophysics Thesis: “Simulating Galaxy Collisions with a Planetarium Projection System”
  - Modified Comins and Schroeder’s GC3D code and simulated the interaction of two galaxy pairs: ESO 77-14 and NGC 2207 & IC 2163.
  - Ported the data to the Digistar II at Abrams Planetarium and created an animation used for astronomy education.

## Honors & Awards

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2016 **Nominee**, WebAssign’s Riz Award

*Raleigh, N.C.*

2015 **Outstanding Park Volunteer**, Raleigh Parks Division

*Raleigh, N.C.*

2011 **Certificate of Appreciation**, N.A.S.A. Night Sky Network

*Hickory, N.C.*

2009 **1st Place**, Digistar Users Group Demo (Category Digistar II)

*Salt Lake City, UT*