Kevin Fuell[1], Anita Leroy[1], Emily Berndt[2]

[1]University of Alabama in Huntsville , [2]NASA Marshall Spaceflight Center/Short-term Prediction, Research and Transition (SPoRT) Program

Kevin.Fuell@nasa.gov

SPoRT — Short-term Prediction Research and Transition Center
http://weather.msfc.nasa.gov/sport/

THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

**Concept:** A growing trend in the e-learning community is related to 'micro-training' or micro-lessons. This training concept has been a part of the formats used by NASA's Short-term Prediction, Research, and Transition (SPoRT) Program for many years in order to meet the training needs of operational users for satellite applications.
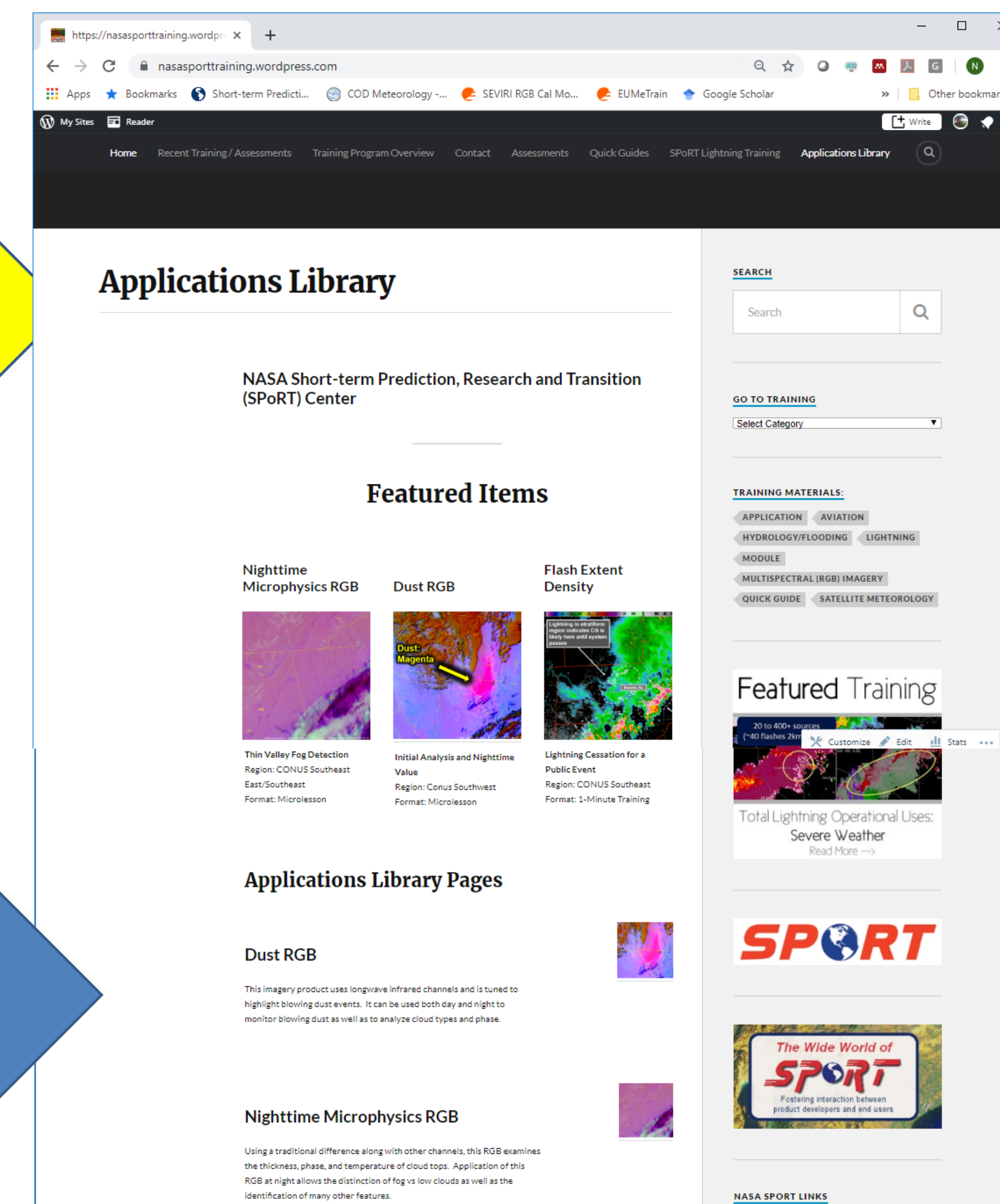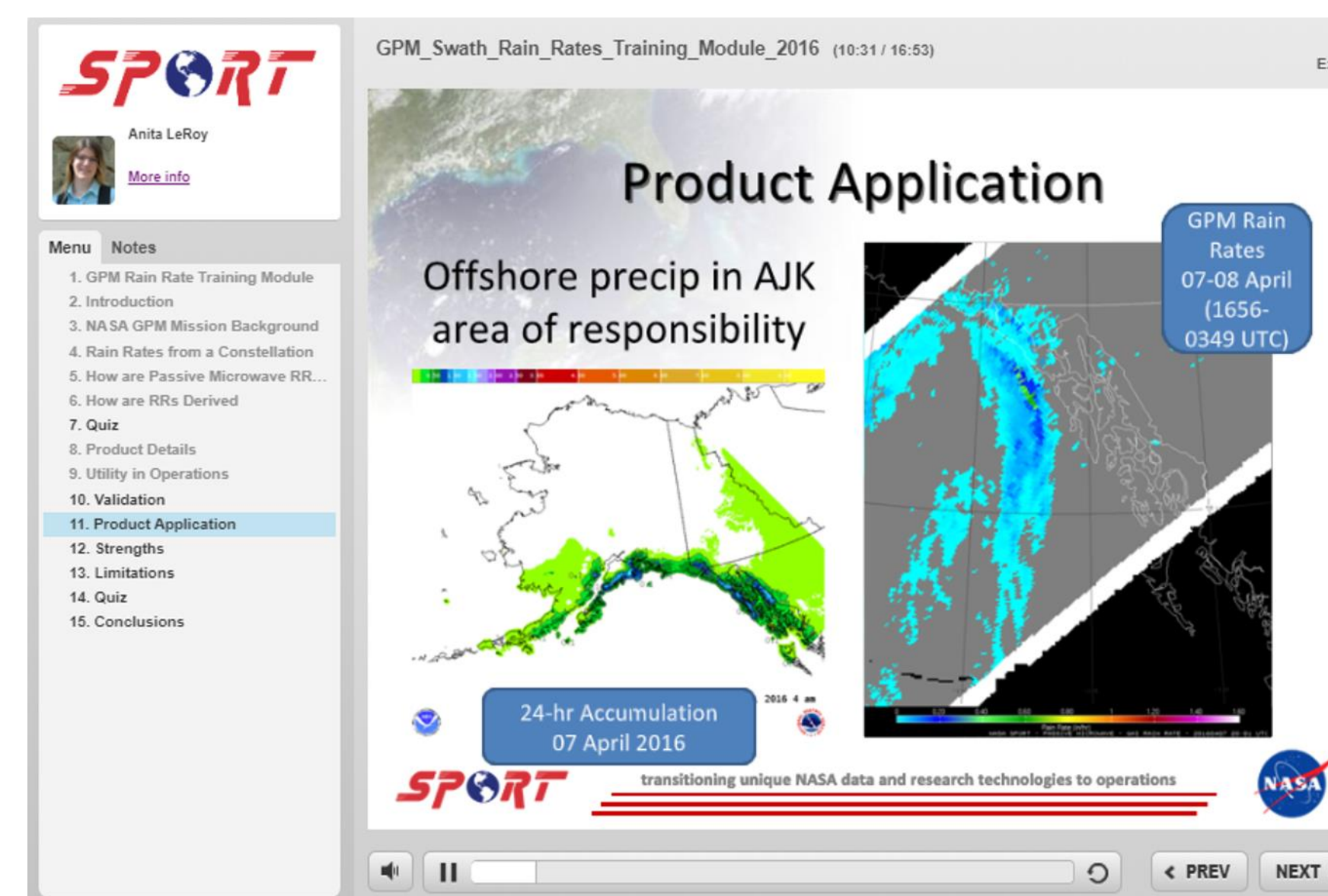
## SPoRT's Application Library

https://weather.msfc.nasa.gov/sport/training/
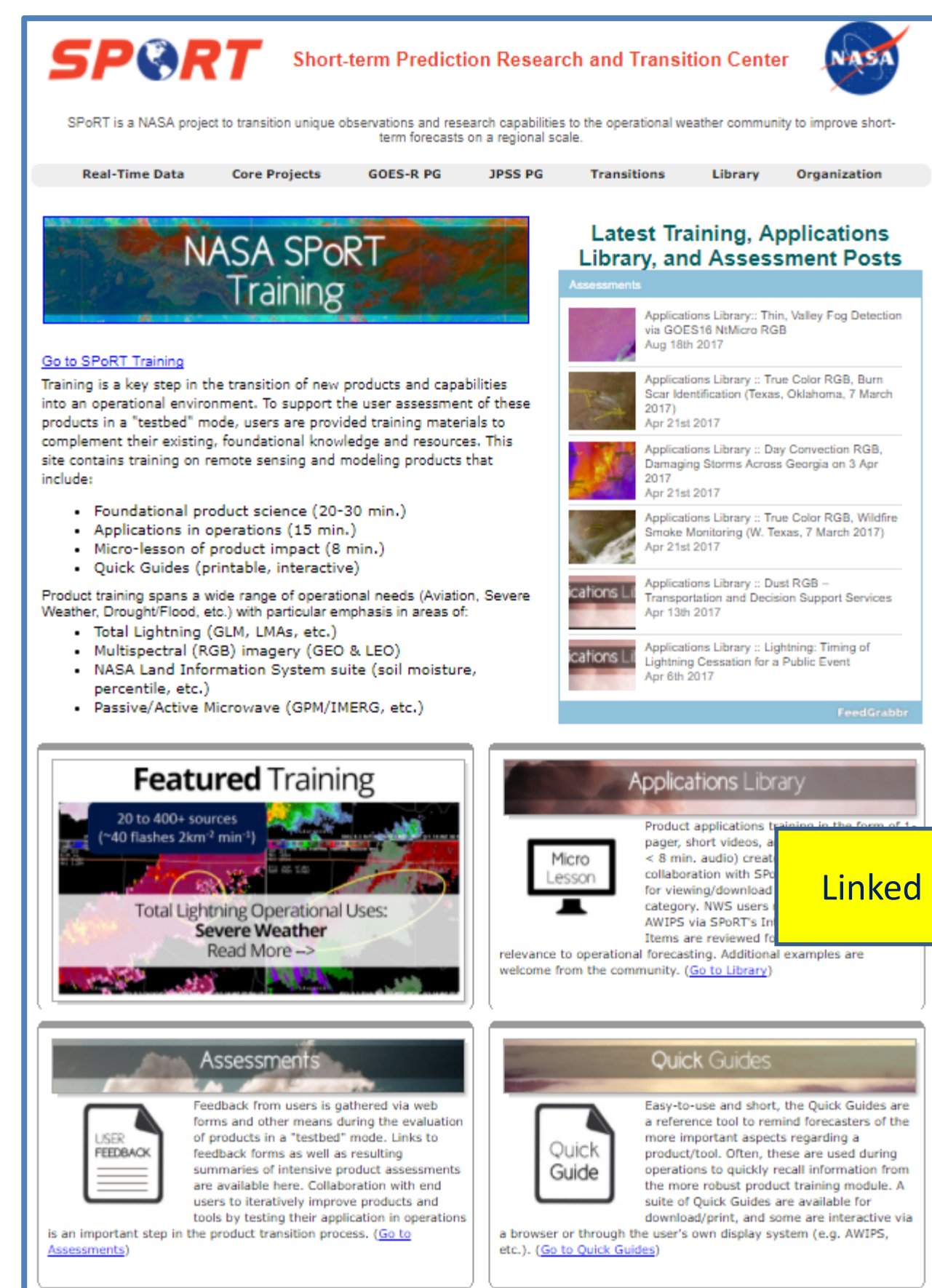
- Freely available to view or download
- Based on 15 years of experience with transition of new satellite products

Linked to …

Impact examples by users, for users over multiple regions

### How Can You Benefit from the Applications Library?

**As a Learner …..**
- Take your basic understanding to the "application" level with examples from your fellow forecasters in the community

**As an Author…..**
- Collaborate with SPoRT for your own example in the library as part of your professional development and potential publication *(You just provide the operational impact, and we help build it!)*

**As a Reviewer ….**
- Assure that the items in the library have operational value and stay knowledgeable about new and regional application examples *(Standardized questions for quick completion and consistency!)*

## Micro-learning Applied to New Satellite Capabilities Transitioned to Operations

Micro-lesson on use of GPM for analysis of precipitation to anticipate onshore flooding

### Global Precipitation Monitoring (GPM) Mission

Objective: Integration of satellite-based precipitation estimates in data void regions to complement operational monitoring of flooding

Impact: Improved use of satellite imagery/data for precipitation monitoring after quick example and training on product 'best practices'

Operational example of impending lightning and the resulting decisions for an airport warning

### Total Lightning

Objective: Application of total lightning data via new satellite capabilities; Ability to integrate with ground-based lightning after training simulation

Impact: Increased lead time for warnings related to lightning safety to allow personnel to seek shelter.
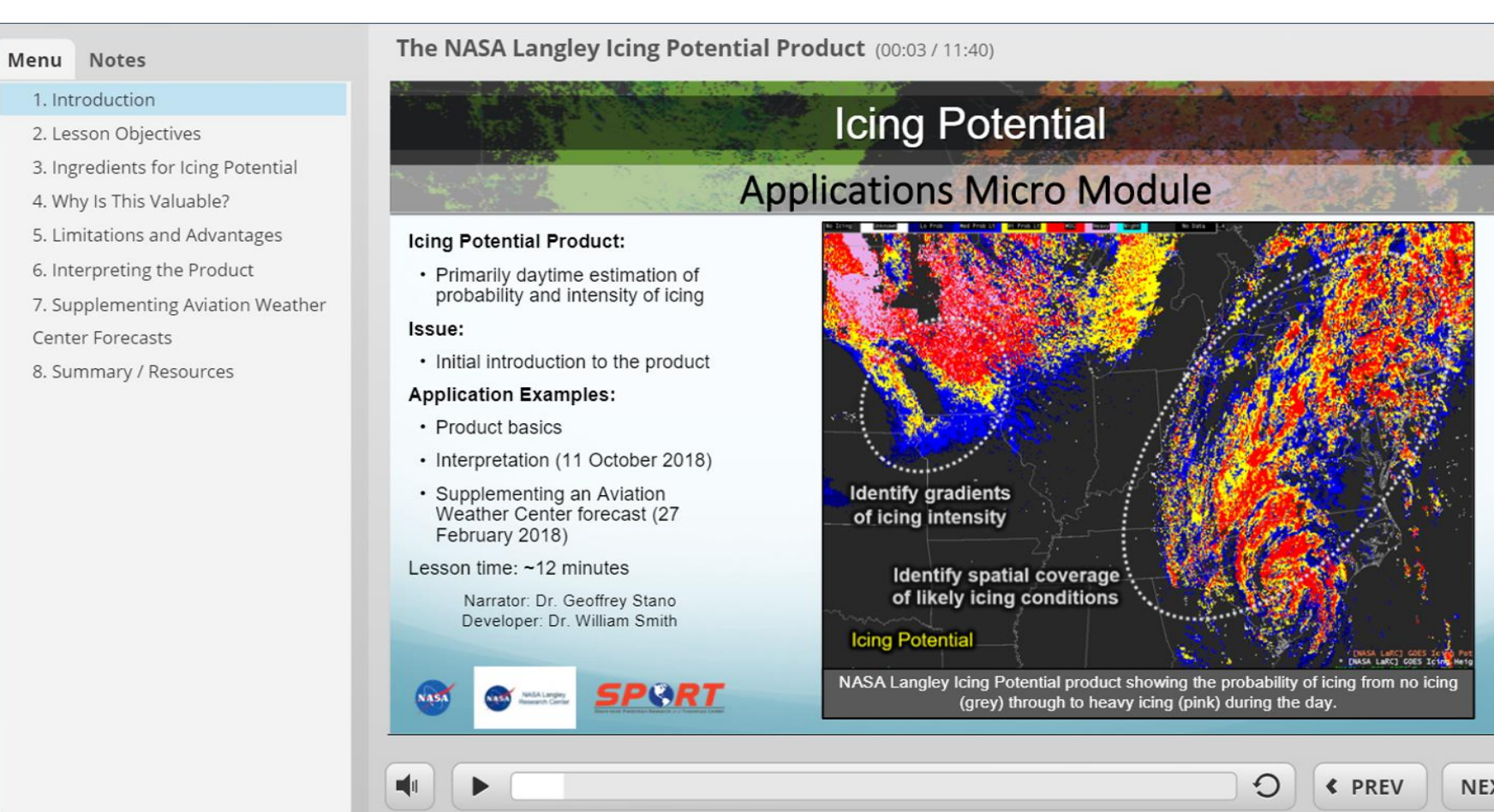
Product reference and application example to diagnose icing severity in 3-dimensions
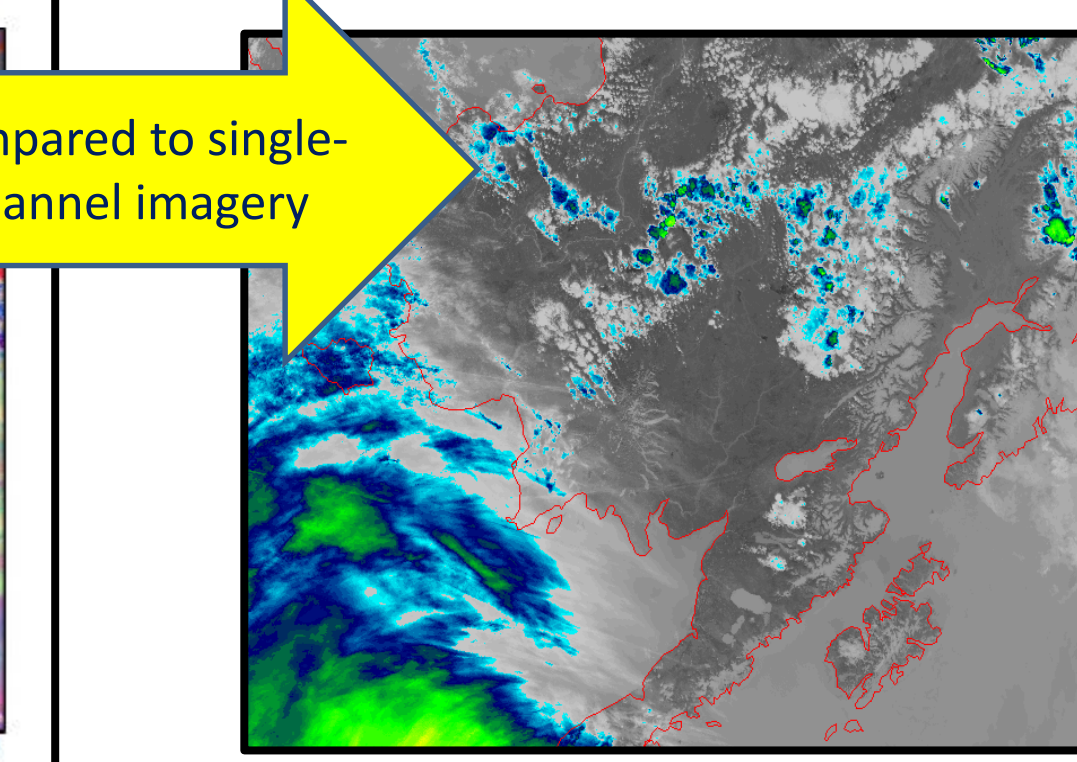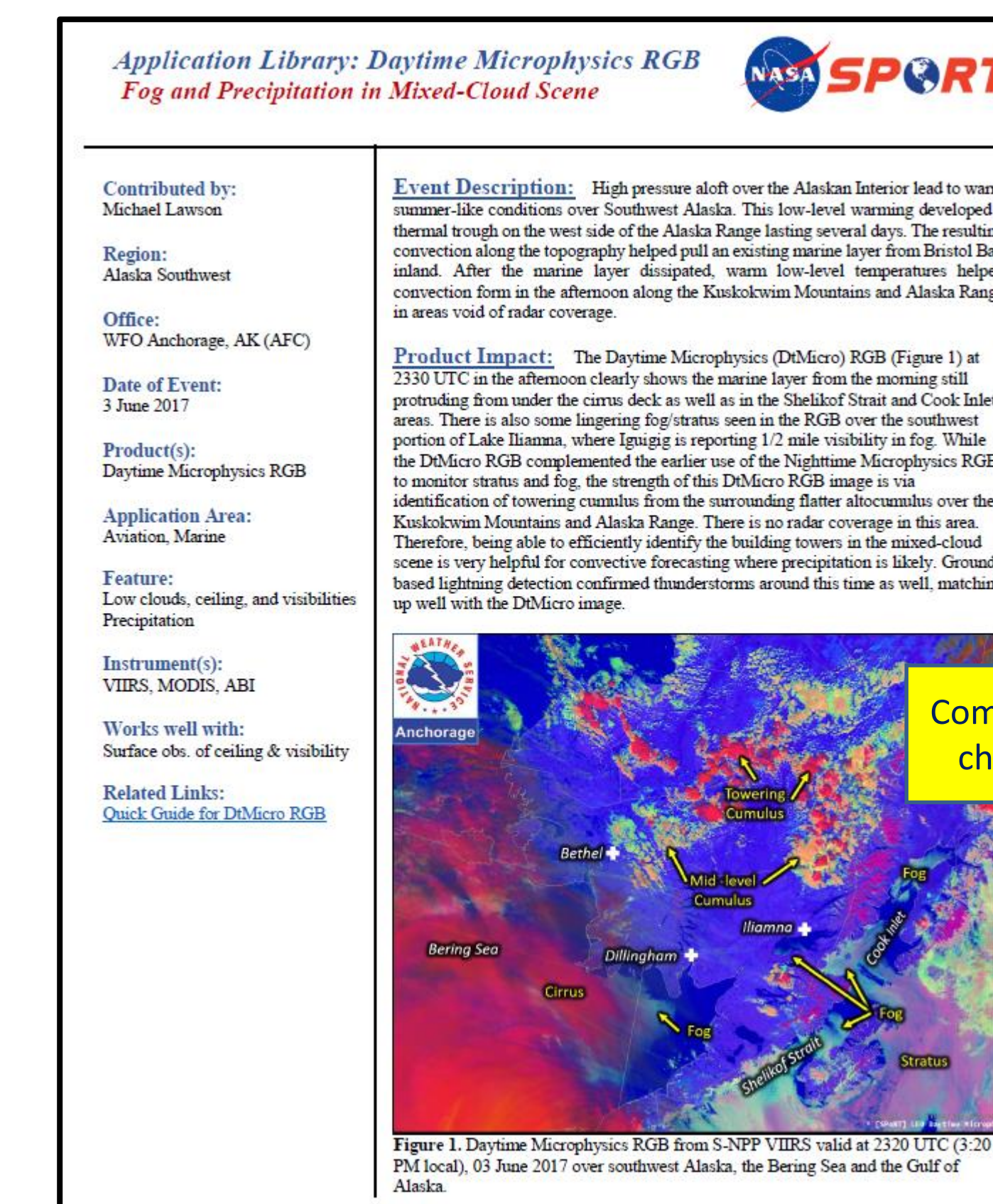
### NASA/LaRC Icing Potential

Objective: Demonstration of automated method for analysis of icing severity from satellite imagery fused with other data.

Impact: Ease of icing analysis to more quickly diagnose areas of aircraft hazards and increase confidence for re-routing decisions
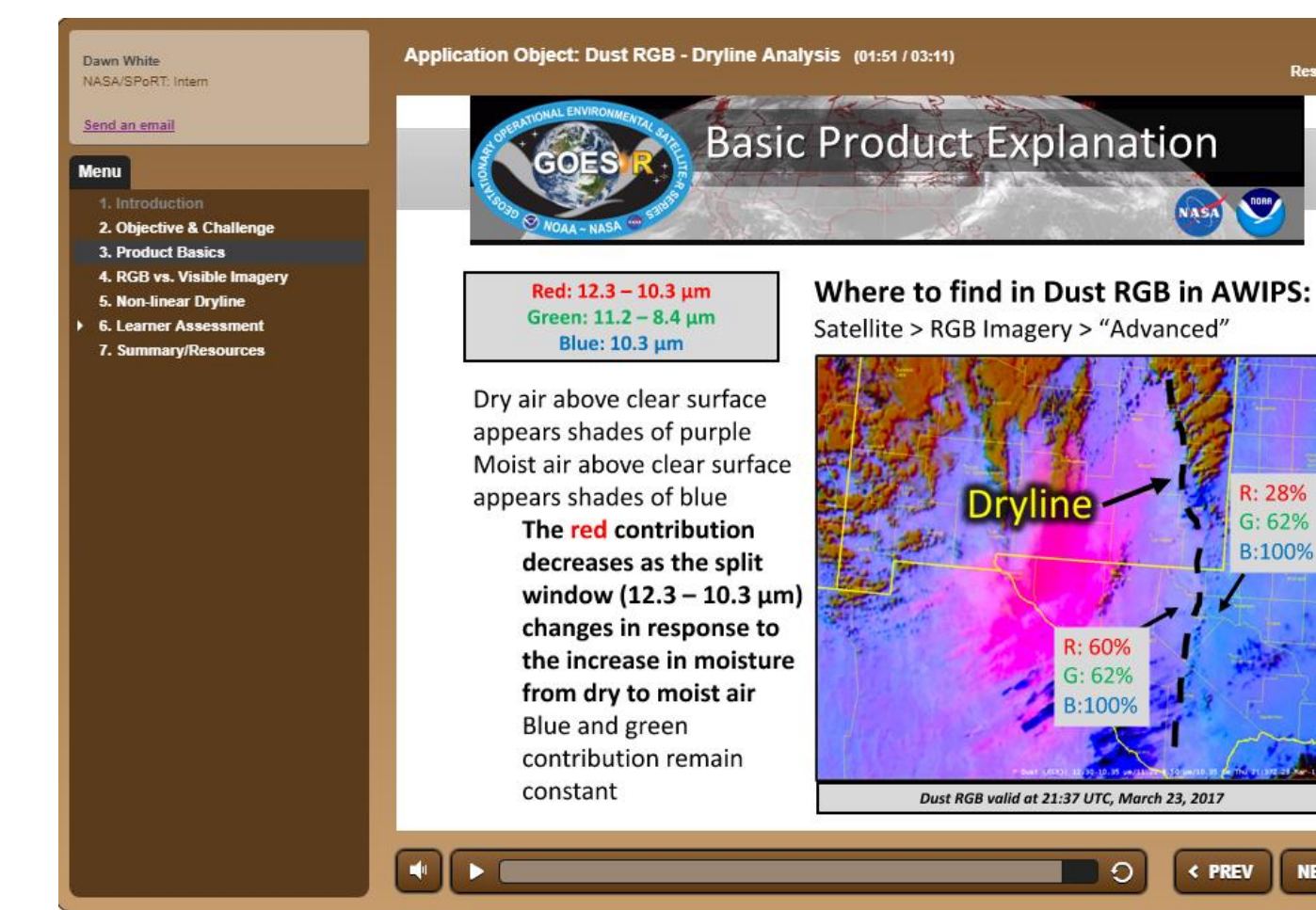
## Formats for the Library

Compared to single-channel imagery

Contribution from NWS Anchorage forecaster applying the Daytime Microphysics RGB to anticipate impacts of low stratus and convection to aviation locations.

### Picture & a Paragraph (1-minute)
- Quick read of local examples
- Impact statement from user
- Annotated images to help with interpretation

Web-based object of 3 minutes on the application of the GOES-16 Dust RGB to diagnose drylines for potential convection in New Mexico and Texas

### Short Learning Object/Video (3-5 minutes)
- Like a "how-to" video (YouTube)
- Includes audio and animation of products within a web browser
- Regional examples and Special cases

Micro-lesson on the use of total lightning products (e.g. GOES-16 GLM) to support operational diagnosis and anticipation of severe weather events. 7 minutes in length

### Micro-lesson (5-8 minutes)
- Focused on operational impact from a forecaster perspective and includes other data sets
- Builds upon fundamentals from basic training via application
- Some examples have been used within publications by NWA JOM