**Rough Draft For a 3-Minute Video Showcase Script**

3/28/19: narration takes 2’52”. Visuals and overlay text to display are just rough ideas, not a single strategy.

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| **Spoken** narration | **Text** to display on screen  (**not** spoken as part of narration) | **Visuals** to use. Text in column 2 shows over last visual displayed, **or** in split screen |
| **Who we are in 2 sentences** | |  |
| Hi. I’m Dan Johnson. I lead a project sponsored by the National Science Foundation.  Our goal is to help more college STEM teachers bring scientific writing into introductory courses. | “Accelerating student scientific writing mastery with electronic support and tailored feedback” | NSF logo, WFU logo (show same time as title text) |
| **Background: What is the compelling problem? Why should the listener care?** | |  |
| Scientific writing helps students learn how to state a problem clearly, summarize evidence, then connect the pieces in a logical story. |  | Fade-in to teacher in a small class setting, grading writing. |
| It provides regular opportunities to practice critical and applied thinking, then get feedback. |  |  |
| Strong scientific writing skills are essential in all STEM fields, and at all career stages. |  |  |
| Yet employers say too few students have the skills needed to meet expected workforce demands |  | Rejected / do not hire / declined  red stamp |
| So why don’t **all** STEM faculty teach scientific writing routinely?   * The first barrier is time. Good feedbackis a one-on-one **dialogue** between teacher and student. * Yet big enrollment classes are normal for STEM. * Also, STEM faculty aren’t trained to teach writing. | * Intro STEM courses may have **200 students** or more * STEM grad programs have **very limited teaching training** | Middle photo of class conversation by a pair. Right side image (2nd fade in) is large lecture hall. Left side image (3rd fade in) is bench worker; as it enters, the middle photo shrinks. |
| **Approach: What we are doing** | |  |
| We’re using a data-driven approach to teaching scientific writing that addresses these challenges. Right now undergraduates and teaching assistants are testing three pieces:   * Annotation exercises * Automated feedback on early work & * Bins-based grading |  | Schematic flow chart, highlighting pieces |
| **Findings: What we’ve done, what we’ve learned, and how we are acting on it** | |  |
| In annotation exercises, students show what they do or do not understand by marking up short published works. |  | Visual of markup |
| We’ve learned the errors students make predict the errors they will make in their own writing. Knowing this, we can intervene sooner. | Early support helps students:   * Recognize errors sooner * Learn from early errors without a grade penalty |  |
| Using SAWHET, our automated feedback system, we can give students still more early feedback. Instructors can skip the copy-editing, and focus on a student’s writing as a whole. | With SAWHET:   * Students can pre-check work & fix mechanical errors **before grading** * Instructors can focus on a report’s **overall structure** |  |
| With data from SAWHET and annotations, we’re learning precisely WHAT students are struggling with, and starting to understand WHY.  We’re also finding better ways to explain the hidden structure BEHIND good science writing. | Many pieces come together in scientific writing. Students may not:   * Recognize the pieces * See what each piece does * Know how to connect pieces smoothly |  |
| In bins-based grading instructors put reports in grade bins based on the quality of the **whole document** using clear criteria that can be scored as yes or no, or present/absent | Bin grades reflect OVERALL quality of work, not points accumulated. | Schematic of bins model.  Animation of binning process. |
| Bins-based grading has been extremely successful in improving student writing **and** reducing instructor grading time. | Reduced:   * Time, energy students spend arguing for points * Instructors’ grading time   Increased:   * Student writing quality * Student attention to writing process |  |
| **Next Steps: Where we are going next** | |  |
| This year we will start sharing our training process with instructors, giving them tools and techniques for:   * Thinking about student writing as a process, * Talking about writing with students, * Making their feedback more effective, and * Collecting data to assess student progress. |  |  |
| Later, we’ll be sharing our database of >4000 student reports with the research community as well. |  |  |
| **If you also are interested in bringing more scientific writing into STEM courses, reach out to us. Let’s share ideas.** | Cite the NSF here | Embed NSF logo, credits here |