



September 25, 2024

Report of the Primary Unit Evaluation Committee for the reappointment and promotion of Dr. Elizabeth Grulke

Dear Dr. Casalaina-Martin,

This letter reports the recommendations of the departmental Primary Unit Evaluation Committee (PUEC) assigned to assess the reappointment and promotion of Teaching Assistant Professor Elizabeth (Boo) Grulke. The PUEC consists of Professor Jeanne Clelland, Chair, and Associate Professor Magdalena Czubak.

Our findings are summarized below. We begin with a brief academic history of Dr. Elizabeth Grulke, and then address teaching and service.

Academic and Employment History

Dr. Grulke studied Physics and Mathematics and received a Bachelor of Arts from the University of Colorado Boulder in 2004. Subsequently, she earned her Master of Arts in Mathematics at the University of Colorado Boulder in 2008. In 2012, Dr. Grulke received her Master of Science in Curriculum & Instruction from the University of Wisconsin, Madison. Her studies culminated in 2019 with the earning of her Doctor of Education in Curriculum & Instruction from the University of Florida.

Dr. Grulke has a long history of teaching, going back to the Spring of 2007. The bulk of this experience is from CU, where she was a Lecturer at the Department of Mathematics for the equivalent of 7 academic years, including 4 summers, prior to her appointment as Teaching Assistant Professor.

Dr. Grulke was appointed Teaching Assistant Professor at the Department of Mathematics at the University of Colorado Boulder in the Spring of 2020, and she was reappointed in Spring 2022. Dr. Grulke is now being considered for reappointment and promotion to Teaching Associate Professor. While the consideration for promotion might be considered early according to the usual timeline (by three semesters), we strongly believe that Dr. Grulke's extensive record of teaching and service to the department and the university completely merits this promotion at this time. For quite some time, Dr. Grulke has been taking on and excelling in leadership roles appropriate to a more advanced rank, and we see no reason to delay her promotion.

In preparing this report, the PUEC committee focused on Dr. Grulke's record at CU since her reappointment in Spring 2022.

Teaching

The PUEC solicited letters from three faculty members and examined the following Multiple Measures of Teaching:

- (1) FCQ Instructor Summary scores,
- (2) FCQ Summary for each course taught,
- (3) FCQ comments for each course taught,
- (4) peer reviews of teaching,
- (5) classroom interviews,
- (6) letters from randomly solicited students,
- (7) course portfolio analysis,
- (8) assessment of the Math Readiness Prep Course developed by Dr. Grulke.

Faculty Letters. We solicited three letters, two from outside the Department of Mathematics. All three letters were overwhelmingly positive and extremely supportive of Dr. Grulke's promotion to Teaching Associate Professor.

- Letter 1, from within the Department of Mathematics. The letter praises Dr. Grulke's teaching across various modalities. Here is a representative quote: "Dr. Grulke has consistently demonstrated her ability to excel in all aspects of her role, from classroom teaching to curriculum development to departmental service. Her promotion would not only recognize her past achievements but also position her to make even greater contributions to our department in the future. She is precisely the kind of educator we need to help lead our department forward, blending traditional mathematical rigor with innovative teaching methods and a deep understanding of educational technology. Her promotion would undoubtedly benefit our department, our students, and the broader university community. I give her my highest recommendation for promotion to Teaching Associate Professor."
- Letter 2, from outside of the Department of Mathematics. The letter discusses Dr. Grulke's involvement with Math 1112, the required math class for Leeds students, and talks about innovation, creativity, flexibility, and technology in service to deep understanding, and exemplary leadership in managing a course with over a thousand students each semester. Some sample quotes are: "Boo is a strong leader, a gifted educator, and an exemplary collaborator. She is absolutely devoted to the success of students, and she works hard for them and for her colleagues." "Because this class is unique, training new instructors is a big and important job for the course coordinator. To her credit, Boo retains a lot of the faculty who teach under her coordination. In sum: Boo's ability to manage such a large course at such a high level of quality is impressive." "I am continually impressed by her ability to think at a high conceptual level and to implement specifics that support the higher goals."
- Letter 3, from outside of the Department of Mathematics. The letter praises both the quantity and quality of Dr. Grulke's teaching. Here is a representative quote: "I am fortunate to have crossed Dr. Grulke's path. She is a very talented and dedicated teaching faculty who is not afraid to work across departments and tackle new and impactful challenges related to teaching or technology. These qualities, combined with her hard-work ethic are, to my opinion, what makes her come across as a professional, making her one of the top instructors among the group of scholars of similar seniority in the same teaching field. She is an asset to CU Boulder and will most likely continue to contribute in many ways towards enhancing the stature and visibility of your department and the University. In conclusion, I support most enthusiastically, Dr. Elizabeth Grulke's promotion to Associate Teaching Professorship at CU Boulder."

FCQ scores. Dr. Grulke's Spring 2022 reappointment included an assessment of her FCQ scores and comments up through Summer 2021. Here we will focus on her teaching from Fall 2021 through the present.

Since Fall 2020, CU has used a new set of FCQ questions without one "main" question. The PUEC chose two questions each from the Course and Instructor questions. We present Dr. Grulke's mean scores for these questions for each course in two tables below.

We note that scores for some courses were not released due to insufficient response rates; these scores are recorded here as "NR." We also note that even when response rates were deemed sufficient for reporting, they were generally low, ranging from 15.8% to 46.2%. (See the tables below for response rates for each class.) Therefore, we advise caution in drawing meaningful statistical conclusions from these scores.

For the FCQ Instructor Summary, the PUEC chose the following questions: *In this course, the instructor:*

- Q10) Challenged me to develop knowledge/understanding.
- Q12) Provided opportunities to ask questions/initiate discussion.

Course	Semester	Response rate	Question	Dr. Grulke
Math 1112-010 (Math Analysis in Business)	Fall '21	40.6%	Q10	4.3
			Q12	4.5
Math 3850-805 (Sem in Guided Math Instruction)	Fall '21	33.3%	Q10	NR
			Q12	NR
Math 1112-023 (Math Analysis in Business)	Spring '22	24.2%	Q10	3.9
			Q12	4.0
Math 1112-028 (Math Analysis in Business)	Spring '22	16.7%	Q10	4.2
			Q12	4.2
Math 1112-303 (Math Analysis in Business)	Summer '22	15.8%	Q10	4.7
			Q12	5.0
Math 1112-305 (Math Analysis in Business)	Summer '22	0%	Q10	NR
			Q12	NR
Math 1112-010 (Math Analysis in Business)	Fall '22	43.5%	Q10	3.6
			Q12	3.9
Math 1112-032 (Math Analysis in Business)	Spring '23	26.7%	Q10	5.0
			Q12	4.8
Math 1112-033 (Math Analysis in Business)	Spring '23	37.9%	Q10	4.9
			Q12	4.8
Math 1112-035 (Math Analysis in Business)	Spring '23	46.2%	Q10	4.1
			Q12	4.1
Math 2510-100 (Intro Statistics)	Summer '23	22.7%	Q10	4.8
			Q12	5.0
Math 1112-022 (Math Analysis in Business)	Fall '23	34.5%	Q10	4.0
			Q12	4.7
Math 1150-581 (Precalculus Mathematics)	Fall '23	28.1%	Q10	4.7
			Q12	4.6
Math 2510-020 (Intro Statistics)	Spring '24	19.2%	Q10	3.8
			Q12	4.2

For the FCQ Course Summary, the PUEC chose the following questions: *In this course, I was encouraged to:*

- Q6) Evaluate arguments, evidence, assumptions, and conclusions.
- Q7) Connect, synthesize, and/or transform ideas into a new form.

Course	Semester	Response rate	Question	Dr. Grulke
Math 1112-010 (Math Analysis in Business)	Fall '21	40.6%	Q6	4.6
			Q7	4.4
Math 3850-805 (Sem in Guided Math Instruction)	Fall '21	33.3%	Q6	NR
			Q7	NR
Math 1112-023 (Math Analysis in Business)	Spring '22	24.2%	Q6	3.7
			Q7	3.7
Math 1112-028 (Math Analysis in Business)	Spring '22	16.7%	Q6	4.3
			Q7	4.3
Math 1112-303 (Math Analysis in Business)	Summer '22	15.8%	Q6	4.3
			Q7	4.3
Math 1112-305 (Math Analysis in Business)	Summer '22	0%	Q6	NR
			Q7	NR
Math 1112-010 (Math Analysis in Business)	Fall '22	43.5%	Q6	3.7
			Q7	3.3
Math 1112-032 (Math Analysis in Business)	Spring '23	26.7%	Q6	4.4
			Q7	4.8
Math 1112-033 (Math Analysis in Business)	Spring '23	37.9%	Q6	4.1
			Q7	4.4
Math 1112-035 (Math Analysis in Business)	Spring '23	46.2%	Q6	3.7
			Q7	3.7
Math 2510-100 (Intro Statistics)	Summer '23	22.7%	Q6	3.8
			Q7	3.8
Math 1112-022 (Math Analysis in Business)	Fall '23	34.5%	Q6	4.0
			Q7	4.0
Math 1150-581 (Precalculus Mathematics)	Fall '23	28.1%	Q6	4.1
			Q7	4.3
Math 2510-020 (Intro Statistics)	Spring '24	19.2%	Q6	3.0
			Q7	3.0

As we can see, Dr. Grulke's scores are consistently high, with rare exceptions that we attribute mainly to randomness and low response rates. We also see that students generally rated Dr. Grulke higher on the Instructor questions than they rated their course on the Course questions. We see this as evidence that students consistently saw Dr. Grulke's instruction as one of the strongest aspects of her courses.

FCQ comments. The PUEC reviewed the FCQ comments for the courses taught by Dr. Grulke.

Below we present some representative comments (in the following, the spelling and grammar of the comments have been reproduced as in the originals).

We begin with MATH 1112, Math Analysis in Business (multiple semesters):

- This course was definitely a challenging course, but one I definitely enjoyed over the course of this semester. Testing us each week got difficult with the many new topics, but overall I think everything I have learned will be useful later on. Thank you for a great semester!
- This class would have been much more effective if it was in-person.
- N/A – Awesome professor, gives you the help when you need it, there's no unnecessary back and forth when trying to get help.
- The class information was easy to understand and could usually figure out how to solve most problems through the videos provided.
- Elizabeth has definitely got a handle on this course and it's material. She knows what she's doing and is very knowledgeable.
- Even though it is hard to answer some of the questions because it was an online class, she did a great job of answering questions that were asked and meeting with me if I needed help.

- Super effective having the videos on our notes to look at and guide us through. I also liked how we were put in breakout rooms, made me more likely to ask questions.
- I loved this course overall. I thought that the professor did a good job with teaching math 1112 remotely. The professor was always helpful whenever I had a question and did explain content in detail. Overall enjoyed the class and thought everything was perfect.
- Elizabeth was the best professor I have had yet. She loves what she's teaching and is so well spoken and educated. She makes complex concepts seem easier (...) she wants you to succeed.
- I thought this class as an online class was really difficult, when I would ask questions it was helpful but doing it over zoom was stressful
- Such an understanding individual and provided a very comforting environment during every class. While the class moved at a fast pace sometimes, Grulke was always very patient in answering questions or concerns on assignments or tests.
- I really enjoyed the way my asynchronous class was designed!

We can see above that the comments directly addressing Dr. Grulke are very positive and enthusiastic. Any negative comments are directed at the course's asynchronous/remote modality. We note there was one long student comment (not included above) that was atypical, and it was directed at the course.

Next, we have comments from MATH 1150, Precalculus Mathematics (Fall 2023):

- She was a fabulous teacher!! I specifically loved how we received weekly breakdowns of what was ahead and what our week would look like. she is super organized and a great professor for this course
- In an online class, it is hard to connect. with other students however, our class discussions provided us with that opportunity. The online resources such as class lectures, textbooks, and videos given with the homework are very helpful and make taking an online class much easier. Professor Grulke was always available for questions and concerns about assignments and provided lots of feedback.
- This was my favorite course because I love math. However, this was not my first time take a math course online and I have to say this was the best set up math course I ever taken.

We finish with two sections of MATH 2510 Introduction/Statistics (Summer 2023 and Spring 2024):

- Dr. Grulke was an amazing professor and I would highly recommend for anyone to take this class with her. I really enjoyed her teaching style. This style of learning really worked for me, so I have no complaints or constructive feedback for this class.
- I think this course did a great job of presenting the material with all of the playposits and the notes to be taken accordingly. I appreciate the consistent feedback on the discussion board.
- The course was very organized which made it easy to follow along in an async manner.

Peer reviews. Since Fall 2021, 4 peer observations have been conducted of Dr. Grulke's teaching. Since Dr. Grulke teaches almost exclusively online courses, the nature of these observations is somewhat different from typical observations for an in-person class. Peer reviewers have generally reviewed the online materials that Dr. Grulke has created for her courses and observed her interactions with students during online office hours.

All 4 peer observation reports have high praise for Dr. Grulke's teaching. Here are some excerpts:

- From Prof. Nat Thiem, MATH 1112, Mathematical Analysis for Business, Fall 2021:
 - "I came away deeply impressed by the technical organization of the class. I've never participated in an online course, but the canvas site quickly allowed me to deduce how things worked (even without a formal tour). The course seems to be evolving and relevant under Boo's guidance (who is also a longtime coordinator of the course)."
 - "The canvas page and syllabus is a model for a well-organized course page. Class expectations are clearly outlined with learning outcomes defined globally and for each module. The structure of the pages (and modules) leads the student naturally into the various tasks needed for each unit, to the point where as a complete stranger I was easily able to follow along."
 - "I have always been somewhat skeptical of online (asynchronous) courses, but I have to admit that this course truly impressed me. It is well organized, relevant, and the students seem to be engaged with the material. Having within the last year conducted (too much?) remote instruction, I am fully aware that these aspects of course don't just happen. I think Boo has

developed and is running an excellent course for our department with the impacts of her work going far beyond this individual observed section.”

- From Assoc. Prof. Sean O’Rourke, MATH 1112, Mathematical Analysis for Business, Fall 2022:
 - “The Canvas site for the course is excellent. All of the material is organized in modules, and each module contains learning goals, video lectures/screencasts, “check-in” quizzes, homework assignments, and exams. All of this material is well-organized and easy to find on Canvas. In addition, the first module is an introduction to the class that efficiently orients students to the online course. The syllabus is equally detailed and explains the course structure, expectations, textbook details, required software, homework policies, exam information, and final grade policies.”
 - “Each course module contains a number of lecture videos/screencasts...All of the videos were clear, easy to follow, and explained the concepts in language the students could understand.”
 - “I was very impressed with Dr. Grulke’s interactions with the students. I have always found it difficult to interact with students over Zoom, but Dr. Grulke made it look easy. She rotated through each student, so everyone had a chance to ask questions. Dr. Grulke would always make sure each student understood and had no more questions on that problem before moving on to the next student. Dr. Grulke clearly made an effort to get the students to explore and discover the answers themselves, rather than just giving them the answers directly.”
- From Teaching Asst. Prof. Al Bronstein, MATH 1112, Mathematical Analysis for Business, Spring 2023:
 - “Elizabeth was very organized. In the first part of the class, students asked questions about the topics covered earlier in the week. She answered questions from five students without hesitation and consultation with the textbook. Elizabeth was well prepared for the questions and gave clear and complete answers. Her level and pace were outstanding. All five students were satisfied with the answers and were able to move on with their projects.”
- From Teaching Assoc. Prof. Kevin Manley, MATH 2510, Intro Statistics, Fall 2024:
 - “Boo’s online classes are extremely well organized, changed somewhat every semester, and have a huge number of components (videos, discussions, module check-ins, quizzes, exams, etc.). In addition to the Canvas course for students and grades, there is a separate Canvas course with instructor resources, including daily lesson plans...The students in my section tell me that the videos are clear and informative. Some even mentioned that they are entertaining. Boo has also made videos explaining the solution to each of the most difficult questions for the whole semester; when these problems are changed, she records a new video. The videos are excellent and appear to give students what they need for a fully flipped classroom without being too long.”
 - “We are in the early part of the semester when the material is still quite easy, so attendance in office hours for all sections (mine included) has been sparse. One student showed up, and Boo immediately greeted the student by name. Their interactions were very familiar and warm. They chatted for a couple of minutes, and it became clear that Boo knew the student as an individual as well as a student in the class. Boo is masterful at answering questions; she leads them to the answer and used the language that the student used to do so. Boo then corrected the slightly incorrect language and added additional insight into the meanings of mutually exclusive and independent events in probability. Her explanations were clever and the questions she asked the student were deep, rather than computational.”
 - “Overall, Dr. Grulke’s teaching remains impressive. Her students feel very comfortable with her and it is easy to see that she cares very much for them as both students and people.”

Classroom interviews. Teaching Associate Professors Kevin Manley and Joseph Timmer conducted classroom interviews for Dr. Grulke’s asynchronous, online sections of MATH 2510 (Intro Statistics) in Spring and Summer 2024. As the classes were asynchronous, they decided to conduct the interviews asynchronously as well. The students in the class were emailed a link to a Google Form in which responses were confidential. The Google form consisted of the following questions:

- (1) What is the most effective aspect of Dr. Grulke’s teaching/course?
- (2) What could Dr. Grulke do differently to improve learning in the class?

In Spring 2024, four responses were received and were as follows. For the question “What is the most effective aspect of Dr. Grulke’s teaching/course?”:

- Having the pre-built Excel calculator.
- Dr. Grulke was a great teacher. Best I could have asked for given the online format. Super prompt and helpful responses, the course and modules were very well done.
- Follow along videos within the activity documents, specifically the ones that show how you read the info to input it into Excel.
- The nice organization of the canvas page and plethora of resources to go to if I have questions.

For the question “What could Dr. Grulke do differently to improve learning in the class?”

- Put more examples in the video lectures and use the Excel calculator step by step in those examples.
- Nothing.
- Maybe just talk a bit more slowly in the videos and explain some aspects with more real world relations and examples.
- I would maybe have benefited from more real world application examples to better understand the “why” behind the material.

In Summer 2024, only one response was received and was as follows. For the question “What is the most effective aspect of Dr. Grulke’s teaching/course?”:

- Group discussion posts.

For the question “What could Dr. Grulke do differently to improve learning in the class?”

- More YouTube videos.

Letters from randomly solicited students. At the end of Spring 2024 and at the beginning of Fall 2024, we sent out a general solicitation to all students from Dr. Grulke’s following courses: MATH 1150-581 (Fall 2023, online course through Continuing Ed), two sections MATH 2510-100 (Summer 2023, online course), MATH 1112-032 (Spring 2023, remote section).

We received 2 responses, both of which were positive. Representative comments from each letter are below (in the following, the spelling and grammar of the comments have been reproduced as in the originals):

- Student 1) “Overall, I do believe that she is a great professor, and that she deserves this opportunity.”
- Student 2) “She is an excellent instructor, would recommend she be promoted as high as possible. Easily my favorite professor in my years at CU, and that says a lot for me, considering I was taught in an online course. Hope this helps and please give her my thank you if possible.”

Course Portfolio Analysis. In Spring 2024, Dr. Grulke submitted a course portfolio for MATH 2510 (Intro Statistics), and Prof. Nat Thiem and Teaching Asst. Prof. Harrison Stalvey conducted a course portfolio analysis. Their analysis is highly positive throughout, giving every category of the course portfolio a rating of “professional” and concluding that, “Overall, the portfolio indicates a *professional* level of teaching.”

Assessment of Mathematics Placement course. Together with Teaching Professor Silva Chang in the Department of Applied Mathematics, Dr. Grulke is responsible for administering and assigning math placement for all incoming and continuing students at CU. In Summer 2023, Dr. Grulke was tasked with designing a course that would provide students who received a “Neither” placement a way to review material and have an additional opportunity to take the exam before the in-person retake in August. She designed a self-paced, asynchronous course consisting of 7 modules that would provide lectures, homework, and quizzes over algebra and geometry topics that one would need to place into precalculus. Dr. Grulke submitted this course for review, and the PUEC is very impressed with its quality. And it is clearly serving its intended purpose well: While only a few students opted to enroll in this course in its first year, of the 12 who took it and subsequently placed into precalculus, 10 chose to take precalculus in the fall and had a passing rate of 70%. Dr. Grulke is now working to improve the notification process to make students more aware of this resource, and we expect that more students will take advantage of this opportunity in the coming years.

Summary. All the Multiple Measures of Teaching show a clear pattern of Dr. Grulke’s success as an instructor. Her pedagogy uses innovative, research-based methods, and her CV shows a long list of a variety of professional development activities both at CU and other institutions. Dr. Grulke’s accomplishments have

been also recognized by multiple grants and awards over the course of her career.

The PUEC voted **2-0** to rank Dr. Grulke's teaching as **Excellent**.

Service

Dr. Grulke's extensive variety of service to the Department of Mathematics, to the University and to the community since Fall 2021 is summarized in this section.

Coordinating MATH 1112: Mathematical Analysis in Business. Dr. Grulke has been the course coordinator for MATH 1112 since 2016. (Note that she began serving in this role while she was still a Lecturer, 4 years prior to her appointment as Teaching Assistant Professor.) MATH 1112 is a large course that is taught in both in-person and online sections, averaging over 27 sections serving over 800 students for the Leeds Business school each semester. This is a required course for incoming Leeds students, as well as any student wishing to transfer into Leeds.

Coordination for this course involves managing at least two different combined Canvas courses, one for the in-person sections and another for the online sections, overseeing over a dozen lecturers, and meeting with more than six learning assistants. In order to support course instructors, Dr. Grulke created a Canvas Community course containing teaching plans, resources for navigating the various technologies in the course, administrative documents, discussion forums for asynchronous communication, and any other resources that would aid in teaching the course.

All three faculty letters praised Dr. Grulke's work on this course.

- Letter 1, from within the Department of Mathematics. Here is a representative quote: "As coordinator for Mathematical Analysis in Business (MATH 1112) since 2014, Dr. Grulke has shown exceptional leadership in managing our department's largest single class. This challenging course, involving numerous students and lecturers, requires close collaboration with the Business School and Residential Academic Programs (RAPs). The scale and complexity of this course cannot be overstated - it serves hundreds of students each semester and requires careful coordination of multiple sections, instructors, and teaching assistants. Under her guidance, the course has run smoothly, with all issues addressed efficiently and timely. Her ability to manage this course effectively speaks volumes about her organizational skills, leadership abilities, and commitment to providing a consistent, high-quality educational experience for all students."
- Letter 2, from outside the Department of Mathematics. Here is a representative quote: "Boo has been an outstanding collaborator with us at Leeds. She is truly a partner; she brings her own ideas and listens to ours. She's flexible and communicative. She is easy to work with. As an outsider from the department, I can see how she skillfully balances many people's inputs. Over the nine years we have worked together, she has served under three department chairs... Boo has added tremendous value to thousands of Leeds students. I am sure I haven't covered all of the ways that Boo is a valuable member of our university community, but I think my remarks give you a sense of what I gem I think she is."
- Letter 3, from outside the Department of Mathematics. Here is a representative quote: "Regarding the quality of her teaching work, I want to highlight her significant contributions to updating Math 1112. She began teaching her first section in Spring 2015, and then took over the course revision efforts initiated by Dr. Delphy Shaulis and Dr. Laura Kornish, of the Departments of Mathematics and Business, respectively. By Fall 2018, she led the transition from D2L to Canvas, supported by a Continuing Education Online Course Development grant. In the summer of 2019, she developed an online version of the course. She further redesigned the course during the summers of 2021 and again in 2024. I will quote some FCQs to convey the quality of her work from the students' point of view: "I am typically wary of online classes, but you made this a breeze! Thank you for being so communicative and providing clear instructions and explanations." "This was not my first time taking a math course online, and I have to say this was the best set-up math course I have ever taken." "She was extremely helpful when giving feedback and would provide very detailed comments when grading, which helped her students understand their errors. She was also very willing to help

every student understand the content. She also gave students chances to see their errors and try again, which helped us master it.” And finally, “This will be the one class I look back on and say, ‘It was painful, but it was transformative.’”

Coordinating MATH 2510: Introduction to Statistics. Dr. Grulke has been the course coordinator for MATH 2510 since Fall 2020. MATH 2510 is a large course that is taught in both in-person and online sections, averaging over 23 sections serving over 600 students each semester. This is a required course for any student wishing to transfer into Leeds, as well as for several majors within the College of Arts & Sciences.

Coordination for this course involves managing the single combined Canvas courses, overseeing over a dozen lecturers and graduate instructors, and meeting with more than six learning assistants. In order to support course instructors, Dr. Grulke created a Canvas Community course containing teaching plans, resources for navigating the various technologies in the course, administrative documents, discussion forums for asynchronous communication, and any other resources that would aid in teaching the course.

Curriculum Development Dr. Grulke has done extensive curriculum development for both MATH 1112 and MATH 2510 over a period of many years.

- For MATH 1112, Dr. Grulke created an OER version of the course in 2020, and she has updated and redesigned the course twice since then, once in 2021 and again in summer 2024. In the summer and fall of 2023, Dr. Grulke collaborated with colleagues at CU and across the country to write a comparative study about transforming math education through this course. The study was submitted to **PRIMUS** and is currently undergoing the revision process.
- For MATH 2510, Dr. Grulke was awarded an ASSETT fellowship in 2020 to support a redesign of this course, with the goal of updating course materials to use more relevant and available technology, eliminate the need for copyrighted materials, and minimize costs associated with taking the course. In 2023, Dr. Grulke developed an online version of this course with many of the same components as the in-person course, modified so as to support students working asynchronously. Dr. Grulke updated both versions of the course again in summer 2024.

Transfer Credit Evaluations. Dr. Grulke has been evaluating course credit for incoming transfer students since 2015. This work involves reviewing hundreds of course syllabi per semester from other departments and assigning equivalent CU course work for them. Every transfer student with a course that appears to be comparable to a MATH course that has not already been determined by the system, will go through Dr. Grulke.

Administering Math Placement Exams. As described above, together with Silva Chang from the Department of Applied mathematics, Dr. Grulke is responsible for administering and assigning math placement for all incoming and continuing students at CU. This is an enormous task that plays a vital role in promoting students’ success in their first math course, which in turn is a key factor in overall student retention and graduation rates.

Other service activities. Dr. Grulke engages in a variety of other service activities whenever the occasion arises. She recently joined the Academic Technology Advisory Group, which is working on **navigating AI in the classrooms**, mitigating changes in video hosting platforms, and discussing changes in campus-wide proctoring options. She has also recently joined the computer committee in the Department of Mathematics and served on the department’s most recent instructor search committee.

As we can see, Dr. Grulke’s contributions to the Department of Mathematics and the University are far-reaching and invaluable.

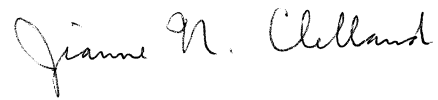
The PUEC voted **2-0** to rank Dr. Grulke’s service as **Meritorious or better**.

Conclusion

The PUEC wants to reiterate that Dr. Grulke is an outstanding asset to the Department of Mathematics, to the University of Colorado, and to the broader community of the mathematics teachers nationwide.

The PUEC voted **2-0** to recommend Dr. Grulke for reappointment and promotion to Teaching Associate Professor.

Sincerely,

A handwritten signature in cursive script that reads "Jeanne N. Clelland".

Jeanne Clelland, Professor of Mathematics (Committee Chair)

A handwritten signature in cursive script that reads "Magda Czubak".

Magdalena Czubak, Associate Professor of Mathematics