TRIUMPHS PSPs Available for Testing in Fall 2018

Descriptions of all PSPs available at: http://webpages.ursinus.edu/nscoville/(Numbered)%20IUSE%20Project%20Descriptions.pdf

Complete versions of most of the PSPs listed below are available at: http://webpages.ursinus.edu/nscoville/studentprojects.html

The *Notes to Instructors* section at the end of each PSP includes further information about its goals and design.

To obtain a preliminary copy of any PSP not yet posted on the TRIUMPHS website, please contact: janet.barnett@csupueblo.edu

**** indicates a PSP that is suitable for use in History of Mathematics Courses and/or Capstone Courses for Pre-service Secondary Teachers.***

Full-length PSPs (numbers correlate with posted PSP Descriptions)	**Intended Course(s)**	**Author**
F 01. A Genetic Context for Understanding the Trigonometric Functions	Pre-calculus, Trigonometry*	Danny Otero
F 02. Determining the Determinant	Linear Algebra	Danny Otero
F 03. Solving a System of Linear Equations Using Elimination	Linear Algebra*	Mary Flagg
F 04. Investigating Difference Equations	Discrete Mathematics	Dave Ruch
F 05. Quantifying Certainty: the p-value	Statistics	Dominic Klyve
F 06. Pythagorean Theorem and Exigency of Parallel Postulate	Geometry*	Jerry Lodder
F 07. Failure of the Parallel Postulate	Geometry*	Jerry Lodder
F 08. Dedekind and the Creation of Ideals	Abstract Algebra	Janet Barnett
F 09. Primes, Divisibility & Factoring	Number Theory*	Dominic Klyve
F 10. The Pell Equation in Indian Mathematics	Number Theory*	Toke Knudsen & Keith Jones
F 13. Bolzano's Definition of Continuity, his Bounded Set Theorem, and an Application to Continuous Functions	Introductory Analysis	Dave Ruch
F 14. Rigorous Debates over Debatable Rigor in Analysis: Monster Functions in Introductory Analysis	Introductory Analysis	Janet Barnett
F15. A Proof and Application of Cotes's Theorem	Complex Analysis*	Diana White & Nick Scoville
F 16. Nearness without distance	Topology	Nick Scoville
F 18. Construction of Figurate Numbers	General Education*	Jerry Lodder
F 19. Pascal's Triangle and Mathematical Induction	General Education*	Jerry Lodder
F 20. Investigations Into d'Alembert's Definition of Limit	Introductory Analysis	Dave Ruch
F 21. An Introduction to a Rigorous Definition of Derivative	Introductory Analysis	Dave Ruch
F 23. The Mean Value Theorem	Introductory Analysis	Dave Ruch
F 24. Abel and Cauchy on a Rigorous Approach to Infinite Series	Introductory Analysis	Dave Ruch
F 25. The Definite Integrals of Cauchy and Riemann	Introductory Analysis	Dave Ruch
F 26. Gaussian Integers and Dedekind Ideals: A Number Theory Project	Number Theory*	Janet Barnett
F 27. Otto Hölder's Formal Christening of the Quotient Group Concept	Abstract Algebra	Janet Barnett
F 28. Roots of Early Group Theory in the Works of Lagrange	Abstract Algebra*	Janet Barnett

Mini-PSPs (numbers correlate with posted PSP Descriptions)	**Intended Course(s)**	**Author**
M 01. Babylonian Numeration	Gen. Ed / Elem. Ed. Courses*	Dominic Klyve
M 03. Derivatives of Trigonometric Functions	Calculus I*	Dominic Klyve
M 09. How to Calculate π, Part 4: Inverse Tangents	Calculus 2*	Dominic Klyve
M 12. Gaussian Guesswork: Polar Coordinates and Arclength	Calculus 2	Janet Barnett
M 13. Gaussian Guesswork: Elliptic Integrals and Integration by Substitution	Calculus 2	Janet Barnett
M 15. Gaussian Guesswork: Sequences & the Arithmetic-Geometric Mean	Calculus 2	Janet Barnett
M 17. Why be so critical? Origins of Analysis in 19th Century Mathematics	Introductory Analysis*	Janet Barnett
M 18. Topology from Analysis: Making the Connection	Topology / Introductory Analysis	Nick Scoville
M 19. Connecting Connectedness	Topology	Nick Scoville
M 20. The Cantor Set before Cantor	Topology	Nick Scoville
M 21. A Compact Introduction to a Generalized Extreme Value Theorem	Topology	Nick Scoville
M 22. From Sets to Metric Spaces to Topological Spaces	Topology	Nick Scoville
M 23. The Closure Operation as the Foundation of Topology	Topology	Nick Scoville
M 24. Euler's Rediscovery of *e*	Introductory Analysis / Calc. 2	Dave Ruch
M 25. Henri Lebesgue and the Integral Concept	Introductory Analysis	Janet Barnett
M 26. Generating Pythagorean Triples via Gnomons *(two versions available)*	Number Theory / Elem. Ed. Courses*	Janet Barnett