

# AMY J. JENSON

amy.jo.jenson@gmail.com ◊ (218) 242-1806 ◊ <https://github.com/amyjenson>

## EDUCATION

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### Montana State University

M.S. Mathematics

GPA: 3.83

Thesis: *Saline fluid flow in an ice-walled channel: a modeling perspective*

Aug 2020 - Present

Advisors: Dr. Scott McCalla

Dr. Mark Skidmore

### University of Alaska Southeast

B.S. Mathematics

GPA: 3.98 with Honors: *magna cum laude*

Thesis: *A SEIRV mathematical model for the dynamics of Yellow Fever Virus*

Aug 2016 - May 2020

Advisors: Dr. Jason Amundson

Dr. Megan Buzby

## CURRENT APPOINTMENT

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**Fall 2020 - Present** Graduate Teaching Assistantship, Montana State University

## PUBLICATIONS

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1. **Jenson, A.J.**, Amundson, J.M., Kingslake, J., and Hood, E.: Long-period variability in ice-dammed glacier outburst floods due to evolving catchment geometry. *The Cryosphere*. <https://doi.org/10.5194/tc-2021-141>, accepted, 2021.

## PRESENTATIONS

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1. **Jenson, A.J.**, Amundson, J.M., Kingslake, J., and Hood, E.: How do changes in glacier and basin geometry affect the evolution of ice-dammed glacier outburst floods? *American Geophysical Union Fall Meeting* (2021) Oral Presentation
2. **Jenson, A.J.**, McCalla, S., Skidmore, M.: Saline fluid flow in subglacial ice-walled channels. *WWCC Graduate Seminar* (2021) Oral Presentation
3. **Jenson, A.J.**, Amundson, J.M., Kingslake, J., and Hood, E.: A model of long-period variability in ice-dammed glacier lake outburst floods. *WWCC Graduate Seminar* (2021) Oral Presentation
4. **Jenson, A.J.**, Amundson, J.M., Kingslake, J., and Hood, E.: Evolution of glacial lake outburst floods over annual to decadal timescales. *Northwest Glaciologists'* (2020) Oral Presentation
5. **Jenson, A.J.**, Buzby, M.: Model of yellow fever among *Aedes aegypti* vectors and human hosts: a SEIRV mathematical model. *NUMS/PiMUC* (2020) Oral Presentation [best speaker award]

## SCHOLARSHIPS, AWARDS, AND GRANTS

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**2020 - 2022** Mildred Livingston Grant Presidential Scholarship, Montana State University  
**2020** Outstanding Graduate in Mathematics, University of Alaska Southeast  
**2019 - 2020** Biomedical Learning and Student Training Undergraduate Research Grant  
**2019 - 2020** Alumni Association Scholarship  
**2018 - 2020** Juneau Rotary Club Scholarship  
**2019 - 2020** Ron Seater Mathematics Award, University of Alaska Southeast  
**2017 - 2018** University of Alaska Southeast Leadership Award  
**2017 - 2018** Gerald W. Butts Memorial Scholarship  
**2016 - 2017** University of Alaska Southeast Leadership Award  
**2016 - 2020** Alaska Performance Scholarship Tier 1  
**2016 - 2020** Wrangell Scholarship  
**2016 - 2020** University of Alaska Scholar

## RESEARCH EXPERIENCE

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- **March 2021 - Present** M.S. Thesis Research, Montana State University
  - Adapted subglacial hydrology model to account for salinity with Drs. McCalla and Skidmore
  - Developed coupled partial differential equations to model evolution of brine concentration
  - Currently writing code to model solutions and do a sensitivity analysis in MATLAB
- **Sep 2019 - June 2021** Research Assistant, University of Alaska Southeast
  - Modeled the evolution of glacial lake outburst floods as a glacier retreats with Dr. Amundson
  - Integrated ice flow, subglacial hydrology, and basin hypsometry models
  - Developed and adapted code to run numerical simulations in MATLAB
  - Wrote peer reviewed paper on results of modeling, article in revision in *The Cryosphere*
- **Aug 2019 - May 2020** Undergraduate Research Experience, University of Alaska Southeast
  - Wrote funded proposal (BLaST Grant) to model transmission of yellow fever with Dr. Buzby
  - Developed a system of differential equations (SEIRV model) and found disease-free equilibrium
  - Analyzed and numerically explored solutions in Maple and MATLAB

## TEACHING EXPERIENCE

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- **Fall 2021** Instructor of Record for Calculus I, Montana State University
- **Spring 2021** Instructor of Record for Survey of Calculus, Montana State University
- **Fall 2020** Mathematics Tutor, Montana State University
- **Fall 2019** Backcountry Navigation Teaching Assistant, University of Alaska Southeast
- **Spring 2018** English Language Teaching Assistant, Associazione Italo Americana, Trieste, Italy
- **Fall 2016 - Spring 2018** Undergraduate Mathematics Tutor, University of Alaska Southeast

## CERTIFICATIONS

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**2020 - Present** Avalanche Level 1, University of Alaska Southeast  
**2019 - Present** Wilderness First Responder, NOLS Wilderness Medicine

## TECHNICAL SKILLS

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**Expertise:** MATLAB, LaTeX, Github  
**Proficient:** R, Maple, Excel, Inkscape

## TESTS AND COMPETITIONS

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**Putnam**      Score: 10      Rank: 1088.5 / 3428      Percentile: 68

## PROFESSIONAL AFFILIATIONS

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**2021 - Present** International Glaciological Society (IGS)  
**2021 - Present** American Geophysical Union (AGU)  
**2019 - Present** Pi Mu Epsilon Mathematics Honor Society