

Amanda Yu Bao, Ph.D., P.E.  
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## Curriculum Vitae

### Education:

- Doctor of Philosophy in Civil Engineering, University of Colorado at Boulder, 2006
  - *University Fellowship (Merit-based, 2003-2006)*
  - *PhD Thesis “A Biot Formulation for Geotechnical Earthquake Engineering Applications”, Supervised by Dr. Stein Sture and Dr. Hon-Yim Ko, University of Colorado at Boulder, Publication No. 3219029, 2006*
- Master of Science in Structural Engineering, Tianjin University, China, 2001
  - *Best Master’s Thesis “Three-Dimensional Finite Element Analysis of Pile-Soil Interaction”, Supervised by Prof. Xiaolu Gu, Tianjin University, 2001*
- Bachelor of Science in Civil Engineering, Tianjin University, China, 1998
  - *Outstanding Student Scholar, Ranked the 1st out of 98 students in the Civil Engineering major*

### Academic Appointments:

- 05/2021 to present: Associate Professor and Program Director in Civil Engineering Technology, Department of Civil Engineering Technology, Environmental Management and Safety, Rochester Institute of Technology, Rochester, NY
- 07/2016 to present: Associate Professor, Department of Civil Engineering Technology, Environmental Management and Safety, Rochester Institute of Technology, Rochester, NY
- 08/2010 to 06/2016: Assistant Professor, Department of Civil Engineering Technology, Environmental Management and Safety, Rochester Institute of Technology, Rochester, NY
- 06/2003 to 05/2006, Research Assistant, Department of Civil, Environmental and Architectural Engineering, University of Colorado at Boulder, Boulder, CO
- 06/2005 to 09/2005, Research Assistant, Sandia National Laboratory, Livermore, CA
- 08/2002 to 05/2003, Teaching Assistant, Department of Civil, Environmental and Architectural Engineering, University of Colorado at Boulder, Boulder, CO

### Industrial Appointments:

- 04/2010 to 08/2010: Structural Engineer, Michael Baker International Inc., Lakewood, CO
- 06/2006 to 04/2010: Structural Engineer, Jacobs Engineering Group Inc., Denver, CO
- 04/2001 to 07/2002, Structural Engineer, North China Municipal Design and Research Institute, Tianjin, China

### Honors and Awards:

- Faculty Fellow in Engineering, Center for Teaching and Learning, Rochester Institute of Technology, 2022-2024
- Eisenhart Award for Outstanding Teaching, Rochester Institute of Technology, 2021
- Keynote Speaker at 2021 RIT Fall Convocation, Rochester Institute of Technology, 2021

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- American Institute of Steel Construction (AISC) Advancing Structural Steel Education Award, 2018
- Featured Faculty for Faculty Scholarship, Rochester Institute of Technology, 2014
- RIT START Research Award, Rochester Institute of Technology, 2012

### Professional Registration:

- Professional Engineer, Colorado #42643 (Since 2008)
- Professional Engineer, New York, #091108 (Since 2010)

### Google Scholar Citations: 1449 (as of August 26th, 2023)

<https://scholar.google.com/citations?user=2qXpk6cAAAAJ&hl=en>

**YouTube Channel:** Amanda Bao – Structural Design Teaching Channel: (290 subscribers, 19,378 views as of August 26th, 2023) <https://www.youtube.com/@amandabao-structuraldesign6122/videos>

### Journal Publications:

\*: Corresponding Author

\_: Undergraduate Student

- [1] **Bao, A.\***, Guillaume, C., Satter, C., Moraes, A., Williams, P., Kelly, T. and Guo, Y., “Testing and Evaluation of Web Bearing Capacity of Corroded Steel Bridge Girders”, *Engineering Structures*, Vol 238, July 2021, 112276, ISSN 0141-0296.  
<https://doi.org/10.1016/j.engstruct.2021.112276>
- [2] **Bao, A.\***, “Enhancing Learning Effectiveness by Implementing Screencasts into Civil Engineering Classroom with Deaf Students”, *Advances in Engineering Education*, Fall 2019, Vol. 7, Issue 3, December 2019.  
<https://advances.asee.org/enhancing-learning-effectiveness-by-implementing-screencasts-into-civil-engineering-classroom-with-deaf-students/>
- [3] Song, Z.N., Huang, Y., Xu, W.W., Wang, L., **Bao, Y.**, Li, S.G. and Yu, M., “Continuously Adjustable, Molecular-Sieving ‘Gate’ on 5A Zeolite for Distinguishing Small Organic Molecules by Size”, *Scientific Reports*, Vol. 5: Article Number: 13981, DOI: 10.1038/srep13981, September, 2015. <http://www.nature.com/articles/srep13981>
- [4] Li, H., Song, Z., Zhang, X., Huang, Y., Li, S., Mao, Y., Ploehn, H., **Bao, Y.** and Yu, M., “Ultrathin, Molecular-Sieving Graphene Oxide Membranes for Selective Hydrogen Separation”, *Science*, Vol. 342, No. 6154, p.p. 95-98, 2013.  
<https://www.science.org/doi/10.1126/science.1236686>
- [5] **Bao, Y.\*** and Sture, S., “Numerical Modeling of Cyclic Mobility Based on Fuzzy-Set Concepts in Plasticity Theory”, *Computers and Geotechnics*, Vol. 38, Issue 3, p.p. 375-382, 2011.

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<https://www.sciencedirect.com/science/article/abs/pii/S0266352X11000048>

- [6] **Bao, Y.\*** and Sture, S., “Application of a Kinematic-Cyclic Plasticity Model in Simulating Sand Liquefaction”, *International Journal of Advances in Engineering Sciences and Applied Mathematics*, Vol. 2, Issue 3, p.p. 119-124, 2010.  
<https://link.springer.com/article/10.1007/s12572-011-0024-0>
- [7] Ge, L., **Bao, Y.**, Ni, C. K. and Ko, H. Y., “Seismic Centrifuge Modelling of Earth Dams”, *Geomechanics and Geoengineering*, Vol.5, Issue 4, p.p. 247-257, 2010.  
<https://www.tandfonline.com/doi/abs/10.1080/17486025.2010.492243>
- [8] **Bao, Y.**, Ge, Y. N., and Sture, S., “Unconstrained Optimization and Calibration of a Kinematic-Cyclic Plasticity Model”, *ASCE Geotechnical Special Publication No. 128, Soil Constitutive Models – Evaluation, Selection, and Calibration*, p.p. 45-68, 2005.  
<https://ascelibrary.org/doi/10.1061/40771%28169%293>

#### Professional Magazine Articles:

- [1] **Bao, A.\***, “Online Learning with a Bonus”, *PRISM*, American Society for Engineering Education (ASEE), Issue: May 2020, p.p. 41. <http://www.asee-prism.org/advances-from-asee-sum-4/>
- [2] **Bao, Y.\***, “Developing a Rating Metric for Sustainable Bridges”, Cover Article, *The Rochester Engineer*, Issue: October 2014.

#### Conference Proceedings:

- [1] **Bao, A.\***, Arachie, Z. and Rodriguez, A., “Evaluating Structural Resiliency of Public Schools as Emergency Shelters in Natural Disasters”, *Proceedings of 12th International Structural Engineering and Construction Conference*, August 14-18, 2023, Chicago, IL.  
[https://isec-society.org/ISEC\\_PRESS/ISEC\\_12/xml/STR-32.xml](https://isec-society.org/ISEC_PRESS/ISEC_12/xml/STR-32.xml)
- [2] **Bao, A.\***, Sichak, C., Anthony, S., “A Case Study on Curved Fully Integral Abutment Bridge Thermal Deformation: I-390 over I-490”, *Proceedings of 2023 International Bridge Conference*, June 12-14, 2023, National Harbor, MD.  
<https://eswp.com/bridge/program/wednesday-am/>
- [3] Abraham, Y.\* and **Bao, A.**, “Implementing the Engineering for One Planet Framework in a Civil Engineering Technology Program”, *Proceedings of 2023 ASEE Annual Conference*, June 25-28, 2023, Baltimore, MD.  
<https://nemo.asee.org/public/conferences/327/papers/38805/view>
- [4] **Bao, A.\***, Sosa, M., Kirby, D., Bowman, M., Bedard, N., Villarreal-Rios, M., Templeton, N. and Khan, A., “State-of-the Art and Practices in Integral Abutment Bridges in the United States”, *39<sup>th</sup> Annual International Bridge Conference*, July 18-20, 2022, Pittsburgh, PA.

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- [5] **Bao, A.**\*, “Implementing Digital Learning to Enhance Post-Pandemic Civil Engineering Teaching”, *Proceedings of 2022 American Society for Engineering Education (ASEE) Annual Conference*, June 26-29, 2022, Minneapolis, MN.  
<https://peer.asee.org/implementing-digital-learning-to-enhance-post-pandemic-civil-engineering-teaching>
- [6] **Bao, A.**\*, “An Insight into Students’ Feedback on Synchronous Distance Learning during COVID-19 Lockdown”, *Proceedings of 2021 American Society for Engineering Education (ASEE) Annual Conference*, July 26-29, 2021.  
<https://peer.asee.org/an-insight-into-students-feedback-on-synchronous-distance-learning-during-covid-19-lockdown>
- [7] **Bao, A.**\*, “Testing and Rating of Existing Corroded Steel Girder Bridges”, *Proceedings of ASCE 2020 Structures Congress*, April 5-8, 2020, St. Louis, MO. (Virtual due to COVID-19)
- [8] **Bao, A.**\*, “Active Learning in Dynamics: Hands-on Shake Table Testing”, *Proceedings of 2020 ASEE St. Lawrence Section Annual Conference*, April 3-4, 2020, Rochester, NY.  
<http://stl.asee.org/wp-content/uploads/sites/43/2020/05/2020-ASEE-STLConferencePapers.pdf>
- [9] **Bao, A.**\*, Guillaume, C. and Moraes, A., “Shear Strength of Deteriorated Steel Girders in Multi-Girder Bridges”, *Proceedings of the 10th International Structural Engineering and Construction Conference - Interdependence between Structural Engineering and Construction Management*, ISBN: 978-0-9960437-6-2, May 20-25, 2019, Chicago, IL, USA.
- [10] **Bao, A.**\*, Guillaume, C., Satter, C., Carle, B., Raisanen, A., Gregg, L., Moraes, A., Williams, P. and Kelly, T., “Structural Capacity Analysis of Corroded Steel Girder Bridges”, Session: Rating and Evaluation of Existing Steel Bridges, *2019 World Steel Bridge Symposium*, April 3-5, 2019 in St. Louis, MO.  
<https://www.aisc.org/education/continuingeducation/education-archives/rating-and-evaluation-of-existing-steel-bridges-b25/>
- [11] **Bao, A.**\*, Gulasey, M., Guillaume, C., Levitova, N., Moraes, A. and Satter, C., “Structural Capacity Analysis of Corroded Steel Girder Bridges”, *Proceedings of the 3rd International Conference on Civil, Structural and Transportation Engineering*, June 10-12, 2018, Niagara Falls, Canada
- [12] **Bao, Y.**\*, Hopson, V. and Lawrence, J., “Soil-Structure Interaction in Bridges with Batter Piles”, *Proceedings of 2017 Structures Congress*, April 6-8, 2017, Denver, CO
- [13] **Bao, Y.**\*, Lawrence, J., Hopson, V., and Puzio, M., “Optimization of Bridge Deep Foundation Design in Seismic and Tsunami Zone”, *Proceedings of 2014 Structures Congress*, Boston, MA, April 3-5, 2014.

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- [14] **Bao, Y.\*** and **Rietz, A.**, “Seismic Soil-Structure Interaction in Fully Integral Abutment Bridges with HP Driven Piles”, *Proceedings of 7<sup>th</sup> International Structural Engineering and Construction Conference*, Honolulu, HI, June 18-23, 2013.
- [15] **Bao, Y.\*** and **Rietz, A.**, “Numerical Modeling of Dynamic Soil-Structure Interaction in Bridges with HP Driven Piles”, *Proceedings of DFI 37<sup>th</sup> Annual Conference on Deep Foundations*, Houston, TX, October 16-19, 2012.
- [16] **Rietz, A.**, **Halewski, S.** and **Bao, Y.\***, “3D Finite Element Modeling of Seismic Soil-Structure Interaction in Bridges”, *Proceedings of EERI 2012 Annual Meeting/National Earthquake Conference*, Memphis, TN, April 10-13, 2012.
- [17] **Bao, Y.\***, **Stevens, C.**, Yu, M. and Dunn, T., “An Innovative Hybrid Nano-Fibered Concrete”, *Proceedings of 2011 PCI Convention & National Bridge Conference*, Salt City, Utah, October 22-26, 2011.
- [18] Kim, S. R., Hwang, J. I., Kim, M. M., **Bao, Y.** and Ko, H. Y., “Comparison of 1-g and Centrifuge Model Tests for Liquefied Sand”, *Proceedings of the Sixth International Conference on Physical Modeling in Geotechnics*, p.p. 1319 – 1324, 2006.
- [19] **Bao, Y.**, Ge, Y. N., Sture, S., and Ko, H. Y., “Numerical Modeling of Cyclic Mobility in Saturated Soil”, *Poromechanics III – Biot Centennial (1995-2005)*, p.p. 353-357, 2005.

### Book and Book Chapters:

- [1] **Bao, A.**, “Design of Highway Bridges: An LRFD Approach, 4<sup>th</sup> Edition”, ZyBooks, Creating 150 Learning Questions with Answer-Specific Feedback, Wiley, 2022.  
<https://www.zybooks.com/catalog/design-of-highway-bridges-an-lrfd-approach-4e/#toggle-id-1>
- [2] ACI-444 Committee, “ACI PRC-444.2-21: Structural Health Monitoring Technologies for Concrete Structures – Report”, American Concrete Institute, ISBN: 978-1-64195-144-9, June 2021.  
[https://www.concrete.org/store/productdetail.aspx?ItemID=444221&Language=English&Units=US\\_Units](https://www.concrete.org/store/productdetail.aspx?ItemID=444221&Language=English&Units=US_Units)
- [3] **Bao, Y.**, “A Biot Formulation for Geotechnical Earthquake Engineering Applications”, Ph.D. Thesis, University of Colorado at Boulder, Publication No. 3219029, 2006.  
<https://www.proquest.com/pagepdf/305354362?accountid=108>
- [4] Ge, Y. N., **Bao, Y.**, and H. Y. Ko, “Dynamic Centrifuge Model Testing of Jen-Yi-Tan Dam”, Technical Report, University of Colorado at Boulder, 2004.

### Selected Presentations:

- [1] “Implementing the Engineering for One Planet Framework in a Civil Engineering Technology Program”, *2023 ASEE Annual Conference*, June 25-28, 2023, Baltimore, MD.

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- [2] “A Case Study on Curved Fully Integral Abutment Bridge Thermal Deformation: I-390 over I-490”, *2023 International Bridge Conference*, June 12-14, 2023, National Harbor, MD.
- [3] “A Study on Horizontally Curved Integral Abutment Bridges”, *2023 Association for Bridge Construction and Design-Western New York Spring Conference*, March 31, 2023, Batavia, NY.
- [4] “Implementing the Engineering for One Planet Framework in the Civil Engineering Technology Program”, Poster, *2023 ASEE-EOP Mini Grant Cohort I Awardees Online Symposium*, [https://docs.asee.org/public/EOP/RIT\\_EOPPoster.pdf](https://docs.asee.org/public/EOP/RIT_EOPPoster.pdf)
- [5] “State-of-the Art and Practices in Integral Abutment Bridges in the United States”, Poster, *39<sup>th</sup> Annual International Bridge Conference*, July 18-20, 2022, Pittsburgh, PA.
- [6] “Implementing Digital Learning to Enhance Post-Pandemic Civil Engineering Teaching”, *2022 American Society for Engineering Education (ASEE) Annual Conference*, June 26-29, 2022, Minneapolis, MN.
- [7] “Testing and Evaluation of Corroded Steel Girder Bridges”, *2021 Association for Bridge Construction and Design-Western New York Fall Conference*, November 12th, 2021, Buffalo, NY.
- [8] “Digital Learning Reshaping Post-Pandemic Teaching”, *Innovative Learning Institute Teachers on Teaching Series*, Rochester Institute of Technology, November 19<sup>th</sup>, 2021.
- [9] “An Insight into Students’ Feedback on Synchronous Distance Learning during COVID-19 Lockdown”, *2021 American Society for Engineering Education (ASEE) Annual Conference*, July 26-29, 2021, Long Beach, CA. (Virtual due to COVID-19)
- [10] “Active Learning in Dynamics: Hands-on Shake Table Testing”, *2020 ASEE St. Lawrence Section Annual Conference*, April 3-4, 2020, Rochester, NY.
- [11] “Structural Capacity Analysis of Corroded Steel Girder Bridges”, Session: Rating and Evaluation of Existing Steel Bridges, *2019 World Steel Bridge Symposium*, April 3-5, 2019 in St. Louis, MO.
- [12] “Structural Capacity Analysis of Corroded Steel Girder Bridges” by Amanda Bao, *The 3rd International Conference on Civil, Structural and Transportation Engineering*, June 10-12, 2018, Niagara Falls, Canada.
- [13] “Evaluation of Shear Strength in Deteriorated I-Plate Steel Girder Bridges”, *Association for Bridge Construction and Design- Western New York Chapter 2018 Fall Conference*, November 16, 2018, Buffalo, NY.
- [14] “Soil-Structure Interaction in Bridges with Batter Piles”, *2017 Structures Congress*, Denver, CO, April 6-8, 2017.
- [15] “Developing Rating Metrics for Sustainable Bridges”, *Association for Bridge Construction and Design 2016 Spring Seminar*, Batavia, NY, April 6, 2016.
- [16] “Enhancing Deaf Students’ Learning in Engineering Disciplines by Implementing Screencast Technology”, *STEM in Urban Education Conference*, Syracuse, NY, October 10, 2014.

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- [17] “Optimization of Bridge Deep Foundation Design in Seismic and Tsunami Zone”, *2014 Structures Congress*, Boston, MA, April 3-5, 2014.
- [18] “Seismic Soil-Structure Interaction in Highway Bridges”, Invited Talk, *ECIV 798 Seminar Series*, Department of Civil and Environmental Engineering, University of South Carolina at Columbia, February 28, 2014
- [19] “Seismic Soil-Structure Interaction in Fully Integral Abutment Bridges with HP Driven Piles”, *7<sup>th</sup> International Structural Engineering and Construction Conference*, Honolulu, HI, June 18-23, 2013
- [20] “Numerical Modeling of Dynamic Soil-Structure Interaction in Bridges with HP Driven Piles”, *DFI 37<sup>th</sup> Annual Conference on Deep Foundations*, Houston, TX, October 16-19, 2012.
- [21] “3D Finite Element Modeling of Seismic Soil-Structure Interaction in Bridges”, *EERI 2012 Annual Meeting/National Earthquake Conference*, Memphis, TN, April 10-13, 2012.
- [22] “An Innovative Hybrid Nano-fibered Concrete”, *2011 PCI Convention & National Bridge Conference*, Salt Lake City, UT, October 22-26, 2011

#### **Exhibition:**

- [1] **Lead Exhibitor**, “DIY Concrete Tiger Paw and Modern Construction Materials”, ImagineRIT 2023, April 29<sup>th</sup>, 2023, Rochester Institute of Technology.  
<https://www.rit.edu/imagine/exhibits/diy-concrete-tiger-paw-and-modern-construction-materials>

#### **Funded and Pending Research Grants:**

- [1] **PI**, “Active Learning in Civil Engineering Structural Courses Using Generative AI and 3D Printing”, RIT Provost Learning and Innovation Grant (PLIG), \$5000, 2023-2024.
- [2] **PI**, “Creating Value by Bridging Design and Construction - Incorporating the Entrepreneurial Mindset into Civil Engineering Technical Elective Courses”, KEEN Entrepreneurial Minded Learning Teaching & Learning Grant, \$5000, 2023-2024.
- [3] **Co-PI**, “Integrating the Engineering for One Planet Framework in the Civil, Construction and Environmental Sustainability Curricula”, the Lemelson Foundation and ASEE, \$99,776, 2023-2026. (Shortlisted and the funding notification will be made by September 21<sup>st</sup>, 2023)
- [4] **PI**, “A Study on Horizontal Curved Integral Abutment Bridge”, Association for Bridge Construction and Design, \$7500, 2022-2023.
- [5] **Co-PI**, “Implementing the Engineering for One Planet Framework in the Civil Engineering Technology Program”, American Society for Engineering Education, \$8000, 2022-2023.
- [6] **PI**, “Evaluation of Structural Capacity in Corroded Steel I-plate Girder Bridges: Phase II”, Association for Bridge Construction and Design, \$7500, 2019-2020.

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- [7] **PI**, “Investigating Structural Capacity of Corroded Steel I-plate Girder Bridges”, Association for Bridge Construction and Design, \$10,000, 2017-2018.
- [8] **PI**, “Active Learning in Structural Dynamics: Hands-on Shake Table Testing”, Provost’s Learning Innovations Grant (PLIG), Rochester Institute of Technology, \$5000, 2018-2019.
- [9] **PI**, “Dynamic Responses of Bridges under Earthquakes and Tsunamis to Facilitate Sustainable Design”, Proposal Revision Fund, Rochester Institute of Technology, \$5000, 2013-2014.
- [10] **PI**, “Implementing Screencast Technology to Enhance Deaf Students’ Learning in STEM Disciplines”, Rochester Institute of Technology, \$9,067, 2013-2014.
- [11] **PI**, “Investigating Dynamic Soil-Structure Interaction in Bridges to Facilitate Sustainable Design”, START program, Rochester Institute of Technology, \$10,000, 2012-2013.
- [12] **PI**, PLIG “Implementing Screencasts Technology to Civil Engineering Technology Courses”, Rochester Institute of Technology, \$5,078, 2012-2013.
- [13] **PI**, Seed Grant “Investigating an Innovative Hybrid Nano-Fibered Concrete Subject to Compression”, Rochester Institute of Technology, \$5,000, 2011-2012.
- [14] **PI**, Scholarship Incentive Grant: “Experimental modeling of carbon nanotube fibered concrete”, Rochester Institute of Technology, 2010-2011, \$7,500.
- [15] **Co-PI**, “Empower II – Operation Tech Squad”, American Association of University Woman (AAUW) Campus Action Project Grant, \$4,780, 2010-2011.

### **Research Proposals (Not funded):**

- [1] **Co-PI**, “Evaluating the Capacity of Public Schools as Local Community Resilience Hubs in Natural Disasters”, National Science Foundation, \$384,342, 2023-2025, submitted in August 2022.
- [2] **Co-PI**, “Center for Field-Implementable Technologies from 3D Printing (FIT-3D)”, US Department of Transportation, \$382,500, 2022-2023, submitted in August 2022.
- [3] **Co-PI**, “Reinforcing the Sustainable Design Concept: From Gateway Course to Capstone”, VentureWell, \$30,000, submitted in May 2022.
- [4] **PI**, “ERI: A Study on Structure Aging: Residual Strength of Corroded Steel Members”, NSF-National Science Foundation, \$199,268, submitted in June 2021.
- [5] **PI**, “Digital Learning Reshaping Post-Pandemic Engineering Classes”, Spencer Foundation, \$49,890, submitted in June 2021.
- [6] **Co-PI**, “Detection, Mitigation & Emergency Response of Blast/Hostile Vehicles for Critical Bridges, Airports & Crowded Spaces”, DHS-Department of Homeland Security, \$199,036, submitted in March 2021.
- [7] **PI**, “Inclusive and Accessible Civil Engineering Instruction with Deaf Students”, NSF-National Science Foundation, \$188,075, submitted in November 2020.
- [8] **Co-PI**, “Deconstructing and Upcycling Plastics to Biofuels and Fixed Carbon Biocomposites”, DOE-Department of Energy, \$353,957, submitted in October 2020.
- [9] **PI**, “Investigating Shear Capacity of Cracked Prestressed Concrete Box Beam Bridges”, Association for Bridge Construction and Design, \$30,000, submitted in January 2020.

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- [10] **PI**, “Curved Integral Abutment Bridge Design”, Maine Department of Transportation, \$22,629, submitted in October 2019.
- [11] **PI**, “Testing, Evaluation and Mapping of New York State Deteriorated Steel Bridges”, New York State of Department of Transportation, \$110,000, submitted in March 2019.
- [12] **Key Personnel**, “UTC: Center for Transportation Innovation and Economic Prosperity (CTIEP)”, USDOT, \$74,999, submitted in September 2017.
- [13] **Co-PI**, “REU Site: Investigating Prediction of Local Scour around Bridge Pier- Testing and Modeling”, NSF-National Science Foundation, \$359,313, submitted in September 2017.
- [14] **PI**, NSF CAREER “An In-Depth Study of Bridge Deep Foundations: Integration of Research and Education”, National Science Foundation, \$500,000, Submitted in July 2015.
- [15] **Co-PI**, Monroe County, “Proposal for Qualifications for Pre-Disaster Mitigation Plan Update”, \$109,473, submitted in Feb 2015.
- [16] **PI**, NSF CAREER “A Framework for Sustainable Bridges”, National Science Foundation, \$506,556, submitted in July 2014.
- [17] **PI**, NSF BRIGE proposal entitled “Investigating Dynamic Responses of Bridges Under Earthquakes and Tsunamis to Facilitate Sustainable Design”, \$174,840, submitted in April 2013.
- [18] **Co-PI**, NSF, “Reforming Curricula in Civil Engineering Technology, Packaging Science, and Information Sciences and Technology by Evidence-Based Practice: Adopting the GPMT Approaches”, \$295,000, submitted in July, 2012.
- [19] **PI**, American Institute of Steel Construction, “Dynamic Responses of Steel Bridges with HP Driven Piles”, submitted in March, 2012, \$96,363.
- [20] **PI**, US Army Engineer Research and Development, “Dynamic Responses of Highway Bridges during Earthquake and Tsunami”, \$171,301, submitted in July, 2012.
- [21] **PI**, NSF CAREER proposal entitled “Investigating Physical and Mechanical Properties of an Innovative Hybrid Nano-Fibered Concrete Under Monotonic and Cyclic Loadings”, \$411,978, submitted in July, 2011.

### Teaching Innovations:

- 2023 KEEN Entrepreneurial Minded Learning Teaching & Learning Grant “Creating Value by Bridging Design and Construction - Incorporating the Entrepreneurial Mindset into Civil Engineering Technical Elective Courses”, The KEEN Foundation.
- 2022 ASEE Engineering for One Planet (EOP) Grant “Implementing the Engineering for One Planet Framework in the Civil Engineering Technology Program”, American Society for Engineering Education.
- 2018 Provost Learning Innovations Grant (PLIG) “Active Learning in Structural Dynamics: Hands-on Shake Table Testing”, Rochester Institute of Technology
- 2012 Provost Learning Innovations Grant (PLIG) “Implementing Screencasts Technology to Civil Engineering Technology Courses”, Rochester Institute of Technology.
- 2012 Effective Access Technology Grant “Implementing Screencast Technology to Enhance Deaf Students’ Learning in STEM Disciplines”, RIT Sponsored Research.
- Screencast Teaching Website: <http://baoteachingcet.com> (Username: test; Password: 1234)

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Website: <http://baoteachingcet.com>; <https://www.rit.edu/directory/axbite-amanda-bao>

- Amanda Bao Structural Design Teaching Channel on YouTube:  
[https://www.youtube.com/channel/UC8i3Y2F9iDc6Y9ZB7j\\_dXtA](https://www.youtube.com/channel/UC8i3Y2F9iDc6Y9ZB7j_dXtA)

### **Professional Organizations Membership:**

- American Society of Civil Engineers (ASCE) Member
- American Institute of Steel Construction (AISC) Member
- Association for Bridge Construction and Design (ABCD) Member
- American Society for Engineering Education (ASEE) Member

### **Service External to Rochester Institute of Technology:**

- Reviewer for Journal of Structural Engineering
- Book Reviewer for ASCE Press
- Book Reviewer for Pearson
- Book Reviewer for Wiley
- Ad-Hoc Reviewer for NSF SBIR/STTR
- Voting Member, American Society of Civil Engineers (ASCE) Civil & Related Engineering Technology Program Criteria Task National Committee (2023-2025)
- ASEE Annual Conference Session Moderator (2023)

### **Service at Rochester Institute of Technology:**

- Faculty Fellow in Engineering, Center for Teaching and Learning (AY 2022-present)
- Program Director, Civil Engineering Technology – BS program (2021-present)
- ABET Team Lead for RIT Civil Engineering Technology BS Program (2022 Review Cycle)
- CVET Curriculum Committee Chair (2021-present)
- Eisenhart Teaching Award Institute Committee (2022-2023)
- RIT General Education Committee – CET College Representative (2017-2020)
- College of Engineering Technology Curriculum Committee – CETEMS Department Representative (2020-present)
- College of Engineering Technology Scholarship Committee – CETEMS Department Representative (2013-2021)
- RIT ASCE Student Chapter Faculty Advisor (2021-present)
- Lead Exhibitor, IMAGINE RIT Creativity and Innovation Festival, DIY Concrete Tiger Paw and Modern Construction Materials (2023)
- Teaching Circle Host, Student Engagement Techniques in Modern College Classrooms, RIT (2023)
- Host and Presenter, RIT Civil Engineering Technology Program Prospective Students Open Houses (2021 – date)
- Host and Presenter, RIT College & Career Event (2021 – date)

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## **Teaching at Rochester Institute of Technology:**

### **Quarter System (2010-2013)**

- 0608.490 Structural Analysis
- 0608.304 Structural Loads and Systems
- 0608.497 Structural Steel Design
- 0608.380 Elementary Structures
- 0608.570 Principle of Dynamics in Civil Engineering Technology

### **Semester System (2013 -present)**

- CVET-330 Structural Analysis & Dynamics
- CVET-332 Structural Analysis and Modeling
- CVET-431 Structural Steel Design
- CVET-434 Design of Highway Bridges
- CVET-230 Elementary Structures
- CVET-437 Principles of Dynamics in Civil Engineering Technology
- CVET-500 Capstone

### **New Course Development**

- CVET-434 Design of Highway Bridges

## **Undergraduate Research Supervision:**

- Supervised 45 undergraduate students in research from 2010-2023
- 3 students in the RIT McNair Scholars/ LSAMP Programs
- 14 female students from the CVET program
- Undergraduate students have co-authored 13 peers reviewed journal/conference papers.
- 15 students have pursued MS/PhD degrees after the undergraduate research experience.