

CURRICULUM VITAE

University of Idaho

NAME: Lili Cai

DATE: 07/18/2023

RANK OR TITLE: Assistant Professor

DEPARTMENT: Forest and Sustainable Products Program; Department of Forest, Rangeland, and Fire Sciences

OFFICE LOCATION AND CAMPUS ZIP: CNR 203C, MS 1133

OFFICE PHONE: 208-885-8638

EMAIL: lcai@uidaho.edu

WEB:    

DATE OF FIRST EMPLOYMENT AT UI: 08/19/2019

DATE OF TENURE: untenured

DATE OF PRESENT RANK OR TITLE: August 2019

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

June 2016 – May 2019 Ph.D., Mississippi State University, Starkville, MS, Wood and Wood Composite Protection

Dissertation: *Beta-cyclodextrins as Agents for Improved Protection Methods of Wood and Strand-based Wood Composites*

Major advisor: Hyungsuk “Thomas” Lim, Co-Major Professor: Dr. Yun Sang Kim

Director of Dissertation: Dr. Dragica Jeremic

Sept. 2012 – June 2015 MSE, Fujian Agriculture and Forestry University, Fuzhou, China, Forest Engineering

Thesis: *Fire Retardant Mechanism of Recycled Paper Foaming Material treated by Silicon-Aluminum Compounds*

Advisor: Dr. Yongqun Xie

Sept. 2008 – June 2012 B.Eng., Fujian Agriculture and Forestry University, Fuzhou, China, Wood Science and Engineering

Capstone project: *Preparation of cellulose acetate optimized by response surface analysis*

Advisor: Dr. Yongqun Xie

Certificates and Licenses:

April 2019, Certificate of Best Practices in Online Instruction, Center for Teaching and Learning, Mississippi State University

EXPERIENCE:

Teaching, Extension and Research Appointments:

Aug. 2019 - present *Assistant Professor*, Department of Forests, Rangeland, and Sciences, University of Idaho, Moscow, ID

May 2019 – July 2019 *Intermittent worker*, Department of Sustainable Bioproducts, Mississippi State University, Starkville, MS

June 2016 – May 2019 *Graduate Research Assistant*, Department of Sustainable Bioproducts, Mississippi State University, Starkville, MS

Sept. 2012 – May 2016 *Graduate Research & Teaching Assistant*, College of Material Engineering, Fujian Agriculture and Forestry University, Fuzhou, China

Academic Administrative Appointments: --

Non-Academic Employment including Armed Forces: --

Consulting: --

TEACHING ACCOMPLISHMENTS:

Areas of Specialization:

Wood Science, Biomaterial Deterioration and Protection, Fire Resistance, Green Building Material Protection

Courses Taught (Course Name, Semester Offered /Enrollment):

- 1) RMAT 450 Biomaterial Deterioration and Protection (Spring 2020 / 13)
- 2) FSP 450/550 Biomaterial Deterioration and Protection (Spring 2022 / 5; Spring 2023 / 8)
- 3) FSP 401 Undergraduate Research (Spring 2021 / 1, Spring 2022 / 1, Fall 2022 / 1)
- 4) FSP 491 Biomaterial Product and Process Development Lab (Spring 2022 / 1, Spring 2023 / 3)
- 5) FSP 204 Special Topics: Forest and Sustainable Products for a Green Planet (Fall 2022 / 3)
- 6) FSP 100 Introduction to Forest and Sustainable Products (Fall 2022 / 10, Spring 2023 / 12)

Students Advised:

Graduate Students:

Currently advising - major professor:

- 1) Courage Alorbu, Ph.D., Natural Resources, University of Idaho, Spring 2022-
- 2) Liang Liang, Ph.D., Natural Resources, University of Idaho, Spring 2022-
- 3) Fatemeh Naeijian, Ph.D., Natural Resources, University of Idaho, Fall 2022- Spring 2023, dismissed.
- 4) Emmanuel Osei-Bonsu, MS, Natural Resources, University of Idaho, Fall 2022-
- 5) Jovale Vincent Tongco, Ph.D., Natural Resources, University of Idaho, Spring 2023-
- 6) Dylan Willard, Ph.D., Natural Resources, University of Idaho, Fall 2023-
- 7) Aynun Nishat Farhabi, Natural Resources, University of Idaho, Fall 2023-

Advised to completion of degree - major professor:

- 8) Courage Alorbu, MS., Natural Resources, University of Idaho, Spring 2020- Fall 2021
- 9) Ogu Osinanna Johnson, MS., Natural Resources, University of Idaho, Fall 2019 - Summer 2021
- 10) Chi-Jui Kuo, MS., Natural Resources, University of Idaho, Fall 2019 - Summer 2021

Served on graduate committee:

- 1) Dikshya Pkhrel, M.S., Natural Resources, University of Idaho, Fall 2020
- 2) Gurkeerat Kukal, M.S., Natural Resources, University of Idaho, Summer 2021
- 3) Endalkachew Mengistie, PhD, Environmental Science, University of Idaho, Fall 2022
- 4) Lucky Ewurum, M.S., Environmental Science, University of Idaho, December 2021
- 5) Muhammad Aamir Bashir, PhD, Biological Engineering, University of Idaho, Fall 2021
- 6) Berlinda O. Orji, PhD, Environmental Science, University of Idaho, Fall 2021- Summer 2023
- 7) Harrison Appiah, PhD, Environmental Science, University of Idaho, Spring 2022-
- 8) Japneet Kukal, PhD, Natural Resources, University of Idaho, Spring 2022-
- 9) Sodiq Yusuf, PhD, Natural Resources, University of Idaho, Spring 2023-

Undergraduate Students:

Undergraduate Students currently in advising:

- 1) Joshua Thomas Carey, B.S., Forest and Sustainable Products, University of Idaho, Spring 2020-Spring 2023
- 2) Cameron C Birch, B.S., Forest and Sustainable Products, University of Idaho, Fall 2020-Spring 2023
- 3) Erik F Brackebusch, B.S., Forest and Sustainable Products, University of Idaho, Spring 2021-Spring 2023

Visiting Scholars Hosted:

- 1) Tingsong Liu, Zhejiang Forestry and Agriculture University, 2020
- 2) Chencheng Zhao, Zhejiang Forestry and Agriculture University, 2020

Post-Doctoral Scholars:

- 1) Dr. Abdulbaset Alayat (Co-advise with Dr. Armando Gabriel McDonald), June 2021-July 2023

Others

- 1) Laura Wommack, Science Teacher, Mansfield High School, Summer 2021 & Summer 2022

Materials Developed: --

Courses Developed:

- 1)RMAT 450 Biomaterial Deterioration and Protection
- 2)FSP 450/550 Biomaterial Deterioration and Protection Lab
- 3)FPS 204 Forest and Sustainable Products for a Green Planet

Non-credit Classes, Workshops, Seminars, Invited Lectures, etc.: --

- 1) RMAT 100 Introduction to Renewable Materials, Fall 2019, Spring 2020
- 2) FSP 100 Introduction to Forest and Sustainable Products, Fall 2020, Spring 2021, Fall 2021, Spring 2022
- 3) RMAT 499 Directed Study: Timber Protection (Spring 2020 / Enrollment of 1)
- 4) FSP 502 DS: Wood Microbiology (Fall 2020 / Enrollment of 3)
- 5) FSP 499 DS: Infrared spectroscopy in Biomaterial Deterioration (Spring 2021 / Enrollment of 1)
- 6) Undergraduate Research Experience course (NR 211) One Guest lecture per Fall 2019/2020/2021/2022
- 7) Undergraduate Research Experience project (NR 212)
 - Mackenzie Nelson, Bio-incising for Improved Permeability of Douglas Fir, Spring 2020
 - Rowdy Claycomb, Maillard Reaction as a Potential Solution for Wood Protection, Spring 2021
 - William Shook, Potential of Potato Peel Waste Extracts for Wood Protection, Spring 2021
- 8) ENVS 300 (s) Environmental Sci Seminar: One guest lecture per Spring 2023

Honors and Awards: --

SCHOLARSHIP ACCOMPLISHMENTS:

Publications, Exhibitions, Performances, Recitals:

Refereed/Adjudicated: (i.e. books, book chaps., journals, proc., abstr., etc.; provide citations-author, date, title, publisher) --

Peer Reviewed/Evaluated: (i.e. journals, articles, proceedings, abstracts, etc. Harvard format)

1. Alorbu, C., Carey, J., McDonald, A., and **Cai, L.** Antifungal Properties of Lauric Arginate (LAE) Treated Wood, *Holzforschung* (2023). <https://doi.org/10.1515/hf-2023-0013>
2. Ming Sun, Zhao, C., Alorbu, C.,[^], Yu Y, **Cai, L.**, Antique Wood Preparation by Inorganic Salt Treatment and Its Performance, *Maderas-Cienc Tecnol* 25(2023):24, 1-15.
3. **Cai L**, Kuo CJ. (2022) Epsilon Poly L-lysine as a Novel Antifungal Agent for Sustainable Wood Protection. *Frontiers in Microbiology*.:3335. DOI: <https://doi.org/10.3389/fmicb.2022.908541>
4. Kuo, C.,[^] Kimsey, M., Page-Dumroese D.S., Kirker, G., Fu, A., Cai, L. (2022) Investigating Soil Effects on Outcomes of a Standardized Soil–Block Test, *Forest Products Journal*, 72 (3): 140–146. DOI: <https://doi.org/10.13073/FPJ-D-22-00020>
5. Alorbu, C. and **Cai, L.**, 2022. Fungal resistance and leachability of genipin-crosslinked chitosan treated wood. *International Biodeterioration & Biodegradation*, 169, p.105378. DOI: <https://doi.org/10.1016/j.ibiod.2022.105378>
6. **Cai, L.**, Park, B. D., Kim, M., Jeremic, D., & Lim, H. (2022). Adhesion interaction of one-component polyurethane in cross-laminating southern pine wood treated with micronized copper azole—type C (MCA-C). *European Journal of Wood and Wood Products*, 80(2), 419-427. DOI: <https://doi.org/10.1007/s00107-021-01776-1>
7. Liu, T., Zhang, W., Wang, J., Zhang, Y., Wang, H., Sun, F., & Cai, L. (2020). Improved Dimensional Stability and Mold Resistance of Bamboo via In Situ Growth of Poly (Hydroxyethyl Methacrylate-N-Isopropyl Acrylamide). *Polymers*, 12(7), 1584. DOI: <https://doi.org/10.3390/polym12071584>
8. **Cai, L.**, Lim, H., Kim, Y., & Jeremic, D. (2020). β -Cyclodextrin-allyl isothiocyanate complex as a natural preservative for strand-based wood composites. *Composites Part B: Engineering*, 193, 108037. DOI: <https://doi.org/10.1016/j.compositesb.2020.108037>

9. **Cai, L.**, Lim, H., Fitzkee, N. C., Cosovic, B., & Jeremic, D. (2020). Feasibility of manufacturing strand-based wood composite treated with β -cyclodextrin-boric acid for fungal decay resistance. *Polymers*, 12(2), 274. DOI: <https://doi.org/10.3390/polym12020274>
10. **Cai, L.**, Lim, H., Nicholas, D. D., & Kim, Y. (2020). Bio-based preservative using methyl- β -cyclodextrin-essential oil complexes for wood protection. *International Journal of Biological Macromolecules*, 147, 420-427. DOI: <https://doi.org/10.1016/j.ijbiomac.2020.01.056>
11. **Cai, L.**, Jeremic, N., Lim, H., Kim, Y., β -cyclodextrins as sustained release carriers for natural preservatives (2019), *Industrial Crops and Products* 130, 42-48. DOI: <https://doi.org/10.1016/j.indcrop.2018.12.061>
12. **Cai, L.**, Chen, T., Wang, W., Huang, D., Wei, Q., Lin, M., & Xie, Y. (2016). Optimization of aluminum/silicon compounds on fire resistance of old corrugated container fiber foam material. *BioResources*, 11(3), 6505-6517.
13. **Cai, L.**, Zhuang, B., Hang, D., Wang, W., Niu, M., Xie, Y., Wang, A. (2016). Ultra-low-density fibreboard with improved fire retardance and thermal stability using a novel fire-resistant adhesive. *BioResources*, 11(2), 5215-5229. DOI: DOI: 10.15376/biores.11.2.5215-5229
14. **Cai, L.**, Fu, Q., Niu, M., Wu, Z., & Xie, Y. (2016). Effect of chlorinated paraffin nanoemulsion on the microstructure and water repellency of ultra-low-density fiberboard. *BioResources*, 11(2), 4579-4592.
15. Chen, T., Xie, Y., **Cai, L.**, Zhuang, B., Wang, X. A., Wu, Z., Lin, M. (2016). Mesoporous Aluminosilicate Material with Hierarchical Porosity for Ultralow Density Wood Fiber Composite (ULD_WFC). *ACS Sustainable Chemistry & Engineering*, 4(7), 3888-3896.
16. Chen, T., Niu, M., Wu, Z., **Cai, L.**, & Xie, Y. (2015). Fire performance of Si-Al ultra-low density fiberboards evaluated by cone calorimetry. *BioResources*, 10(2), 3254-3264.
17. Chen, T., Niu, M., Xie, Y., Wu, Z., Liu, X., **Cai, L.**, & Zhuang, B. (2015). Modification of ultra-low density fiberboards by an inorganic film formed by Si-Al deposition and their mechanical properties. *BioResources*, 10(1), 538-547.
18. Wu, Z., Xie, Y., Chen, T., & **Cai, L.** (2015). Effects of synergistic flame retardancy of zinc borate and chloroparaffin on ultra-low-density wood-fiber-based material. *Journal of Fujian Agriculture and Forestry University (Natural Science Edition)*, 44 (5), 548-553
19. **Cai, L.**, Xie, Y., Zhuang, Q., & Niu, M., (2014). Effects of polysilicate aluminum sulfate on fire resistance of ultra-low-density materials. *Journal of Beijing Forestry University*, 36(5), 136-141
20. Niu, M., Hagman, O., Wang, X. A., Xie, Y., Karlsson, O., & **Cai, L.** (2014). Effect of Si-Al compounds on fire properties of ultra-low density fiberboard. *BioResources*, 9(2), 2415-2430.
21. **Cai, L.**, Fu, Q., Xie, Y., Zhou, J. (2014). Preparation of cellulose acetate optimized by response surface analysis. *Journal of Fujian College of Forestry*, 34 (1), 92-96. DOI: 10.3969/j.issn.1001-389X.2014.01.018
22. Zhou, J., Xie, Y., Wu, Z., **Cai, L.** (2014) Study on the characterization and thermostability of foam materials of organic-inorganic hybrid ultra-low density wood fiber. *Wood Processing Machinery*, (3), 8-11

Other: (reports, proceedings, papers, citations and references, performances) --

Refereed/Adjudicated (currently scheduled or submitted): (provide citations) --

Peer Reviewed/Evaluated (currently scheduled or submitted):

1. Alorbu, C., Carey, J., McDonald, A., and Cai, L. Antifungal Properties of Lauric Arginate (LAE) Treated Wood *Holzforchung* (scheduled)

Presentations and Other Creative Activities: (i.e. slide sets, web pages, video productions, etc., provide date and location) --

Professional Meeting Papers, Workshops, Showings, Recitals:

Posters / presentations / proceedings (^ Graduate students, * Undergraduate students)

1. Cai, L., Liang, L., ^ Alorbu, C., ^ Phytic Acid Based Bio-Fire Retardants for Green Wood

- Building Materials Protection 2023 USDA NIFA Bioeconomy Project Director Meeting, Kansas City, MO, July 13-14, 2023 (Poster)
2. Cai, L., McDonald, A., Alorbu, C., ^ Hybridizing Wood with Zinc Oxide-Eugenol Cement towards High-performance Building Materials, 2023 USDA NIFA Bioeconomy Project Director Meeting, Kansas City, MO, July 13-14, 2023 (Poster)
 3. Cai, L., Forest and Sustainable Products in the Era of Climate Change (Invited talk), Oak Ridge National Laboratory, Oak Ridge, TN, 23 June, 2023
 4. Hasanagić, R., Bahmani, M., Humar, M., Fathi, L., Cai, L., Short-Term Absorption of Water and Coatings on Thermally Modified Blue-Stained Spruce Wood, Proceedings IRG Annual Meeting (ISSN 2000-8953), IRG/WP 23-40984, IRG54 Scientific Conference on Wood Protection, Cairns, Australia, 28 May – 1 June, 2023
 5. Blackebush, E., Alorbu, C., Cai, L., The research of ZnO-eugenol for wood protection, University of Idaho Undergraduate Research Symposium, April 2023 (Poster)
 6. Birch, C., Hansen, C., Blackebush, E., Cai, L., McDonald, A., Testing Pellets Made of Wooden Sawmill Waste Mixed with Thermoplastic Polymer for Improved Viability as an Energy Source, University of Idaho Undergraduate Research Symposium, , April 2023 (Poster)
 7. Alorbu, C., ^ **Cai, L.**, Leachability and Biological Decay Resistance of Zinc Oxide Eugenol Organic Cement Treated Wood, SWST 2023 International Convention, Asheville, NC USA, June 25-30 2023 (Oral and poster presentation)
 8. Liang, L., ^ Orji B., Carne R., McDonald, A., Maughan M., **Cai, L.**, Comparison of fire performance of PrinTimber and commercial fire-resistant wood products, The 2nd PrinTimber Annual Meeting, Auburn University, May 2023 (Poster)
 9. Liang, L., ^ Alorbu, C., ^ McDonald, A., **Cai, L.**, Durability and Fire resistance of phytic acid treated wood. 119th American Wood Protection Association Annual Meeting, Tucson, Arizona, April 3-5, 2023 (Oral presentation)
 10. Wommack, L., Alorbu, C., ^ **Cai, L.**, On Developing Green Fire-Retardant Building Coatings, Partners in Science National Conference, San Diego, CA, January 13-14, 2022 (Oral presentation)
 11. **Cai, L.**, Kuo, C., ^ Epsilon Poly L-lysine as a Novel Antifungal Agent for Sustainable Wood Protection, 75th Anniversary of the FPS International Conference, Madison, Wisconsin, June 2022 (Oral presentation)
 12. Liang L., ^ Alorbu, C., ^ **Cai, L.**, Antifungal Properties and Fire Resistance of Phytic Acid Treated Wood, The 1st PrinTimber Annual Meeting, University of Idaho, May 2022 (Poster)
 13. Carey J.,* Alorbu, C., ^ **Cai, L.**, Durability of Lauric Arginate treated Wood, University of Idaho Undergraduate Research Symposium, April 2022 (Poster)
 14. Wommack, L., Alorbu, C., ^ **Cai, L.**, Chitosan Montmorillonite Based Coatings for Improved Fire Resistance of Building Materials, Partners in Science National Conference, San Diego, CA, January 14-15, 2022 (Poster)
 15. **Cai, L.**, Artificial Intelligence in Green Building Materials Protection? University of Idaho Artificial Intelligence Workshop, October 14, 2021 ([Presentation](#))
 16. Kuo, C., ^ **Cai, L.**, In Vitro Antifungal Activity of Epsilon Poly L-lysine against Wood-Decaying Fungi, 117th American Wood Protection Association Annual Meeting, Nashville, Tennessee USA July 2021 ([Presentation & proceeding](#))
 17. Alorbu, C., ^ Carey J.,* **Cai, L.**, Antifungal and Fire Resistance of Lauric Arginate Treated Wood. 117th American Wood Protection Association Annual Meeting, Nashville, Tennessee USA July 2021 (Presentation & proceeding)
 18. Kirker, G., Ohno, K., Tang, J., and **Cai, L.**, Culture Maintenance of Typical Wood Decay Fungi Used in Soil Block Tests, 117th American Wood Protection Association Annual Meeting, Nashville, Tennessee USA July 2021 ([Presentation & proceeding](#))
 19. Carey J.,* Alorbu, C., ^ **Cai, L.**, Effect of Lauric Arginate on the Growth and Morphology of Wood-Decaying Fungi, Idaho Conference on Undergraduate Research, Virtual, July 2021 (Poster)
 20. Alorbu, C., ^ **Cai, L.**, In vitro Antifungal Properties of Genipin-Crosslinked Chitosan against Wood Decay Fungi, 75th Forest Products Society International Convention, Virtual, June 2021 (Poster)
 21. Johnson, O., ^ **Cai, L.**, Potato Peel Waste Extracts for Wood Protection, 75th Forest Products Society International Convention, Virtual, June 2021 (Poster)
 22. Kuo, C., ^ **Cai, L.** Revisit Soil Effect on Soil Block Test, 75th Forest Products Society International

- Convention, Virtual, June 2021 (Poster)
23. Claycomb, R., * **Cai, L.**, Maillard Reaction as a Potential Solution for Wood Protection, University of Idaho Undergraduate Research Symposium, Virtual, April 2021 (Poster)
 24. Shook, W., * Johnson, O., **Cai, L.**, Potential of Potato Peel Waste Extracts for Wood Protection, University of Idaho Undergraduate Research Symposium, Virtual, April 2021 (Poster)
 25. Carey J., * **Cai, L.**, In Vitro Antifungal Activity of Lauric Arginate against Wood-decaying Fungi. University of Idaho Undergraduate Research Symposium, Virtual, April 2021 (Poster)
 26. Nelson, M., * **Cai, L.**, Bio-incising for Improved Permeability of Douglas Fir, University of Idaho Undergraduate Research Symposium, Virtual, April 2020 (Poster)
 27. **Cai, L.**, Jeremic, N., Lim, H., Kim, Y., β -Cyclodextrin-Allyl Isothiocyanate Complex as a Natural Preservative for Oriented Strand Board, 61st Joint Convention of Society of Wood Science and Technology (SWST) and Japan Wood Research Society (JWRS), Nagoya University, Japan, November 2018 ([Presentation](#))
 28. **Cai, L.**, Jeremic, N., Lim, H., Kim, Y., β -cyclodextrin-allyl isothiocyanate complex as a natural preservative for oriented strand board, 61st Joint Convention of Society of Wood Science and Technology (SWST) and Japan Wood Research Society (JWRS), Nagoya University, Japan, November 2018 ([Poster](#))
 29. **Cai, L.**, Jeremic, N., Lim, H., Kim, Y., Effect of β -cyclodextrins/allyl isothiocyanate complexes on fungi resistance of southern yellow pine, 114th American Wood Protection Association Annual Meeting, Seattle, WA, April 2018 ([Presentation](#))
 30. **Cai, L.**, Jeremic, N., Lim, H., Kim, Y., "Effect of β -cyclodextrin/boric acid complexes on setting behavior of pMDI resin in oriented strand board production, 11th International Conference on Wood Adhesives, Atlanta, GA, October 2017 ([Poster](#))
 31. **Cai, L.**, Jeremic, N., Wood preservation by β -cyclodextrin boric acid complex, 71st Forest Products Society International Convention, Starkville, MS, June 2017 ([Poster](#))
 32. **Cai, L.**, Xie, Y., Zhuang, Q., & Niu, M., Effects of polysilicate aluminum sulfate on the fire resistance of ultra-low density materials, 14th Chinese Society of Wood Science Conference, Manzhouli, Inner Mongolia, July 2014 ([Presentation](#))

Patents:

1. Xie, Y., Wu, Z., Zhuang, Q., Chen, T., Zhuang, B., **Cai, L.** (2014). Preparation of ultra-light foam material by using vinyl chloride-vinylidene chloride copolymer emulsion. C.N. Patent No. 104072085A.
2. Xie, Y., **Cai, L.** Wu, Z., Zhuang, Q., Chen, T., Zhuang, B. (2014) Biodegradable ultra-light foam with enhanced fire resistance. C.N. Patent No.104120635B.

Grants and Contracts Awarded:

Internal Grants

1. **Lili Cai (PI)**, University of Idaho Operation: Resubmission Support, ~\$19,000, 03/15/2023 to 07/24/2023
2. **Lili Cai (PI)**, University of Idaho - Open Access Publishing Fund, \$2,000, August 2022
3. **Lili Cai (PI)**, University of Idaho [P3-R1 Grant Matching Program](#), RA for 2Y, Summer 2022
4. **Lili Cai (PI)**, University of Idaho Operation: Resubmission Support, \$11,739, 03/15/2021 to 06/30/2021
5. **Lili Cai (PI)**, USDA NIFA McIntire-Stennis (Startup) IDAZ050720, \$200,000, Development of "Green" Wood Protection Chemicals, 10/16/2019 to 10/15/2022

External Grants

6. Damon Woods, **Lili Cai (Co-PI)**, Armando McDonald, Idaho Dept. Commerce IGEM, \$100,141, Testing new manufacturing methods of natural fiber insulation batts (Supplemental Funding#2), 09/01/2023 to 06/31/2024
7. Damon Woods, **Lili Cai (Co-PI)**, Armando McDonald, Idaho Dept. Commerce IGEM, \$106,175, Testing new manufacturing methods of natural fiber insulation batts (Supplemental Funding), 09/01/2022 to 06/31/2022
8. **Lili Cai (PI)**, USDA NIFA AFRI, \$300,000, Phytic Acid Based Bio-fire Retardants for Green Wood Building Materials Protection, 07/01/2022 to 06/31/2024
9. Michael Maughan, Carolina Manrique Hoyos, **Lili Cai (Co-PI)**, Ahmed Ibrahim, Brian Via, NSF RII Track-2 FEC: Developing a Circular Bio-based Framework for Architecture, Engineering and Construction Through Additive Manufacturing, \$3,974,309, 10/01/2021 to 09/30/2025
10. **Lili Cai (PI)**, Armando McDonald, USDA NIFA AFRI IDAZ050720, \$329,888, Hybridizing Wood and

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- Zinc Oxide-Eugenol Cement towards High-performance Building Materials, 05/01/2021 to 04/30/2024
11. **Lili Cai (PI)**, M. J. Murdock Charitable Trust - Partners in Science 202016467, \$19,000, Lignin based coating by enzymatic polymerization for improved fire performance of building materials, 06/01/2021 to 09/01/2023
 12. Damon Woods, **Lili Cai (Co-PI)**, Armando McDonald, Idaho Dept. Commerce IGEM, \$206,624, Testing new manufacturing methods of natural fiber insulation batts, 06/01/2021 to 05/31/2022

Contracts

13. **Lili Cai (PI)**, University of Idaho Biomaterial Deterioration and Protection Lab Services Center, FY2021 (\$8,007)

Pending Grant Proposal

1. Ertugrul Taciroglu, Alistair Smith, **Lili Cai (Senior personnel)**, et al, NSF Engineering Research Center for Community Pyro-Resilience, Equitability, and Sustainability (CyPRES), \$2,498,680, 09/01/2024 to 08/31/2029.
2. **Lili Cai (PI)**, NSF, CAREER: Construction for Climate-- Epsilon-poly-l-lysine as A Novel Natural Product for Sustainable Wooden Building Materials Protection, \$653,467, 08/01/2023 to 07/31/2028
3. Kristopher Waynant (PI), James Moberly, **Lili Cai (Senior personnel)**, et al, NSF REU Site: Elements of Sustainability, \$404, 672, 01/01/2023 to 12/31/2025

Declined Grant Proposal

1. **Lili Cai (PI)**, Inna Popova, Armando McDonald. NSF, Developing Bio-based preservatives from Potato Peel Wastes for Green Wood Building Material Protection, \$579,836, 01/15/2022 to 01/14/2025

Honors and Awards:

1. Selected as Women Ambassadors Creating the Future of Wood Science, SWST, March 2023
2. Advised student Liang Liang obtained 1) Student travel fellowship, 2023 119th American Wood Protection Association Annual Meeting, 2023; 2) Courage Alorbu 2023 SWST conference travel scholarship.
3. Advised student Chi-Jui Kuo obtained 1) Student travel fellowship, 2021 117th American Wood Protection Association Annual Meeting, 2021; 2) Student Scholarship, 2021 75th Forest Products Society International Convention, Virtual.
4. Student travel award, 61st Joint Convention of Society of Wood Science and Technology (SWST) and Japan Wood Research Society (JWRS), 2018
5. Honorable mention award of student poster competition, 61st Joint Convention of SWST and JWRS, 2018
6. Student travel fellowship, 114th American Wood Protection Association Annual Meeting, 2018
7. 1st place winner of student poster competition, 11th International Conference on Wood Adhesives, 2017
8. 2nd place winner of student poster competition, 71st Forest Products Society International Convention, 2017

SERVICE:

Major Committee Assignments: --

- 1) Spring 2023 UI University Level Promotion and Tenure Committee- Silver
- 2) Fall 2022 – present UI Sustainability Certificate Working Group
- 3) Fall 2022 – present University Safety and Loss Control Committee
- 4) Spring 2022/2023 Searching committee for faculty position in Fire Ecology and Management
- 5) Fall 2021/Spring 2022 Searching committee for faculty position in Natural Resources Policy and Management
- 6) Fall 2020 – Spring 2023 UI Research Council
- 7) Fall 2020 FRFS Promotion and Tenure Committee
- 8) Fall 2019 CNR Diversity & Inclusion Committee

Professional and Scholarly Organizations

Memberships:

- 2020- International Research Group on Wood Protection
2021-2025 International Research Group on Wood Protection Communications Committee
2018- American Wood Protection Association
2018- International Society of Wood Science and Technology
2016- Forest Product Society

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Peer-reviewed for (#):

- 1) ACS Sustainable Chemistry & Engineering (1)
- 2) American Journal of Construction and Building Materials
- 3) Applied Science (1)
- 4) Arabian Journal of Chemistry (1)
- 5) AWWA conference proceeding (2)
- 6) ES Food & Agroforestry (2)
- 7) Fibers (2)
- 8) Forests (1)
- 9) Forest Product Journal (5)
- 10) Holzforschung (2) 1
- 11) Industrial Crops and Products (1)
- 12) International Biodeterioration & Biodegradation (2)
- 13) Journal of Open Innovation: Technology, Market, and Complexity (1)
- 14) Journal of Wood Chemistry and Technology (1)
- 15) Transactions of the ASABE (2)
- 16) SWST conference proceedings (1)
- 17) Standards (1)
- 18) Wood and Fiber Science (3) 1

Served on review panel for:

- 2020 NSF Graduate Research Fellowship Program (GRFP)
- 2021 USDA NIFA ARFI Nanotechnology for Agricultural and Food Systems
- 2022-2023 USDA NIFA ARFI A1503 Seed Grant Proposal Panel

Served on special issue as a guest editor for:

- 2022 "Preparation and Application of Wood Composite", Polymers (ISSN 2073-4360)

Outreach Service: --

- 2020- Actively participate in CNR students recruiting through phone calls, postcard writing
- 2021 July "Meet an Prof" at Idaho Conference on Undergraduate Research
- 2021 September Faculty Success Seminar Series: M. J. Murdock Charitable Trust - Partners in Science Experience Sharing
- A Partnership Toward Sustainable Insulation, June 2022, Featured Stories in University of Idaho
- Idaho researchers test hemp's potential for construction, Aug. 8th, 2022, Idaho Statesman.
- U of I partner with Idaho company for research on hemp insulation, Aug. 18th, 2022, Idaho News6
- How one company is making housing material out of a newly legalized crop, Sep 02, 2022, Idaho News6
- In fierce battle against climate change, Idaho-led team is up for \$160 million grant, July 14, 2023, Idaho Statesman

Community Service: --

Honors and Awards: --

PROFESSIONAL DEVELOPMENT:

Teaching:

2023	Giving Effective Presentations Webinar, FPS, 03/30/2023 The 6 th annual Student Success Conference - The Power of Agency: Voice, Choice, and Student Success, April 5, U of I Moscow
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2019	How to Create Interactive Presentations and Slideshows, 2019 UI Fall CETL Workshop Series Defusing the Bias Bomb in Class: Applied Strategies, UI No Impression Like a First (and Lasting) Impression: The Graphic Syllabus, UI Teaching for Learning: Identifying and Refining Pedagogies that Work for You and Your Students, UI “Best Practices in Online Instruction”, Center for Teaching and Learning, Mississippi State University
2017	Certification of Heart saver CPR, AED & First Aid

Scholarship:

2023	NSF Engineering CAREER Proposal Workshop, May 8- 9 & 12, 2023 PrinTimber Annual Meeting, May 16-19, 2023
2022	U of I NSF CAREER Workshop: Best Practices for Competitive Proposals U of I Research Leadership Development Academic Impressions: "Crafting and Maintaining Your Career Vision: A Workshop for Early Career Faculty" Overview of NIFA’s Funding Opportunities and Tips for Success in Grant Funding by USDA-NIFA National Program Leader Dr. Steven Thomson U of I FIERCE – NSF Regional Innovation Engine Town Hall PrinTimber Annual Meeting, May 10-13, 2022
2021	Planning and Writing Successful Grant Proposals Series Idaho is an EPSCoR State - What This Means for Supporting Your Research How to Develop and Deliver an Effective Pitch Assessing Your Grant Readiness Early Career Faculty Research - Grant Programs USDA NIFA AFRI: Tips for Getting Started with Your Next Proposal Developing Data Management Plans - Best Practices and Resources Equipment Grant Programs: An Overview
2020	Spring 2020 Proposal Development Academy, University of Idaho Creating research diagrams, University of Idaho NSF: Broader Impacts Really Do Matter! NSF: Understanding Proposal Review Being an Excellent Proposal Reviewer: Efficiency, Effectiveness, and Service to the Community, AAAS Designing Evaluation Plans for Research Projects to Strengthen Implementation and Outcomes, AAAS Lessons Learned from 10,000 Proposal Reviews: Top Reviewer Criticisms and How to Avoid Them, AAAS Putting your Best Foot Forward: Presenting Yourself and Your Science for Career Success” by Dr. Beth Russell, American Chemical Society-Idaho webinar series NSF Funding Opportunities Explained: NSF CAREER and NSF EPSCoR Track-2, Track-4 by Kelvin Chu, The Implementation Group
2019	“Broad Impact 101 Workshop”, University of Idaho
2016	“Writing your first grant proposal”, Mississippi State University “USDA Mock Panel Review Do’s and Don’ts of Writing USDA Grants”, Mississippi State University

Outreach:

2019	The Miracle at Work Forest Tour, North Idaho
2023	Earth Day Event – Forest and Sustainable Products Program Showcase

Administration/Management:

2019 to present	Purchasing Card Program & Travel Expense Training Chrome River Travel and Expense Training Creating a Respectful Community
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	<p>Diversity and Inclusion IT Security Awareness UI Stewardship of Resources & Ethical Conduct Defensive Driving Course Fire Extinguisher Use Laboratory Safety Hazard Communication – The New GHS Standards</p>
2021 & 2022	<p>Search/ P & T Committee Training</p>
2023	<p>Academic Impressions: Building Confidence as a New Leader: Overcoming Internal Barriers Academic Impressions: Setting up the Supervisory Relationship: Understanding and Adapting Your Supervisory Style Academic Impressions: The Art and Practice of Giving and Receiving Feedback Jaggaer</p>