

## TEWODROS T. GHEBRAB, PH.D., P.E.

### CONTACT INFORMATION

Department of Civil, Environmental & Construction Engineering  
 Texas Tech University  
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### EDUCATION

<b>Ph.D.</b>	Civil Engineering	Michigan State University	2008
<b>M.S.</b>	Civil Engineering,	University of New South Wales (Australia)	1996
<b>B.S.</b>	Civil Engineering,	Addis Ababa University (Ethiopia)	1992

### RECENT AND CURRENT POSITIONS

Assistant Professor	Department of CECE, TTU	2014 – Present
Assistant Professor	Department of CECE, TTU	2009 - 2014

### PREVIOUS EXPERIENCE

Project Engineer	Walker Engineering, Inc.,	2008 – 2009
Research Assistant	Michigan State University	2006 - 2007
Senior Lecturer	University of Asmara (Eritrea)	1996 - 2004
Graduate Assistant	Addis Ababa University (Ethiopia)	1992 – 1994

### LICENSURE

Licensed Professional Engineer in Texas, PE#107332	2010 – Present
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### MEMBERSHIP IN PROFESSIONAL SOCIETIES

- [2] American Concrete Institute (ACI)
- [1] American Association of Civil Engineers (ASCE)

### HONORS, AWARDS AND RECOGNITIONS

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|--|------|
| [7] Dr. Charles L. Burford Faculty Teaching Excellence Award               | 2015 |
| [6] Nominated for Dr. Charles L. Burford Faculty Teaching Excellence Award | 2013 |
| [5] Nordberg Fellowship Award for excellence in research achievement, MSU  | 2008 |

[4] Nordberg Fellowship Award for excellence in research achievement, MSU	2007
[3] Recognition for academic excellence, Phi Beta Delta, MSU Chapter	2005
[2] Fulbright Scholarship, U.S. Department of State	2004
[1] AIDAB Scholarship, Australian Government	1995

## TEACHING

### Undergraduate Courses Taught

Construction Structural Analysis and Design;  
 Construction Foundations and Earthwork  
 Construction Capstone Design  
 Introduction to Construction  
 Surveying  
 Mechanics of Solids  
 Design of Steel Structures  
 Construction Concrete Structures  
 Construction Transportation Technology  
 Statics  
 Foundation Design  
 Structural Analysis II

### Graduate Courses Taught

Advanced Structural Analysis

### Graduate Student Advisor, Co-Advisor, or Committee Member

#### *Texas Tech University*

Sevan Mirzaian, Masters Report Committee member, “*Performance of the Mechanically Stabilized Earth Retaining Walls: A Critical Review,*” graduated in Dec. 2015.

Olalekan Ramoni, Dissertation Committee Co-Chair, “*Remanufacturing Processes of Electrical Vehicle Battery,*” graduated in Dec. 2013

Sureel Saraf, Dissertation Committee Co-Chair, “*Premature Distress Mitigation in Continuously Reinforced Concrete Pavements,*” graduated in May 2013

Mohana Vegesna, Master’s Thesis Committee Chair, “*The Advancements of Cementitious Materials Through Nanotechnology,*” graduated in Dec. 2013

Daniel Buntoro, Master’s Thesis Committee Member “*Evaluation of Asphalt Binders to Assess Flushing Potential in Chip Seals,*” graduated in Dec. 2013.

#### *Jimma Institute of Technology, Jimma University, Ethiopia*

Werku Koshe, Dissertation Committee Chair, “*Engineering Properties and Application of Molasses Modified Bitumen in Hot Mix Asphalt,*” expected to graduate August 2019.

- Feseha Sahile, Dissertation Committee Chair, “*Concrete Crack-Healing Effect of Granular Cement Particles When Used as a Replacement for Fine Aggregates,*” expected to graduate August 2019.
- Getached Kebede, Dissertation Committee Co-Chair, “*The Use of Scoria and Marble Powder in the Production of Green Concrete for Sustainable Concrete Structure,*” expected to graduate August 2019.
- Lucy Feleke, Dissertation Committee Co-Chair, “*Use of Construction and Demolition Wastes for Replacement of Fine Aggregate in concrete,*” expected to graduate August 2019.
- Abay Legesse, Dissertation Committee member, “*Assessment and Evaluation of Procurement Methods on Public Building Construction in Ethiopia,*” expected to graduate August 2019.
- Shihunegn Alemayehu, Dissertation Committee member, “*Application of agent based modelling to simulate and optimize construction process,*” expected to graduate August 2019
- Teyba Wedajo, Dissertation Committee member, “*Utilization of Waste Plastic to Enhance Pavement Performance,*” expected to graduate August 2019
- Enyew Asress, Dissertation Committee member, “*Optimal Integration of pavement Design for Functional and Structural Sustainability,*” expected to graduate August 2019

### Regional Student Competition Coached

ASC Region V Student Competition: Commercial Building Team	2017
ASC Region V Student Competition: Commercial Building Team	2016
ASC Region V Student Competition: Commercial Building Team	2015
ASC Region V Student Competition: Commercial Building Team	2014
ASC Region V Student Competition: Design-Build Team (team won 2 <sup>nd</sup> place)	2013
ASC Region V Student Competition: Design-Build Team	2012
ASC Region V Student Competition: Design-Build Team (team won 2 <sup>nd</sup> place)	2011
ASC Region V Student Competition: Design-Build Team	2010

### PUBLICATIONS

#### Peer-Reviewed Journal Articles (corresponding author bolded; citations before first author)

- [9] Fadhel Aoudi, **Tewodros Ghebrab**, Parviz Soroushian, Roz-Ud-Din Nassar, “*Reliable and Convenient Multi-Helix Soil Anchor for Deployable Structures,*” *Journal of Soils & Foundations*, Elsevier (under review) (2017)
- [8] **Ramoni, M.**, Zhang, Y., Zhang, H.-C., Ghebrab, T., “*Laser ablation of electrodes for Li-ion battery remanufacturing,*” *The International Journal of Advanced Manufacturing Technology*, Vol. 88, Issue 9, pp 3067–3076 (6/2016)
- [7] **Roz-Ud-Din Nassar**, Parviz Soroushian, Tewodros Ghebrab, “*Field Investigation of High-Volume Fly Ash Concrete Pavements,*” *Journal of Resources, Conservation & Recycling*, Elsevier, Vol. 73, 2013, pp. 78-85. (6/2013). **Times Cited 9**

- [6] **T. Ghebrab** and P. Soroushian, “*Mechanical Properties of Cement Mortar: Development of Structure-Property Relationships*,” International Journal of Concrete Structures and Materials, Vol. 5, No. 1, 2011, pp. 3-10. (6/2011). **Times Cited 9**
- [5] **T. Ghebrab** and P. Soroushian, “*Development of Structure-Property Relationships for Concrete*,” Journal of Advanced Concrete Technology (ACT), Vol. 9, No. 1, 2011, pp. 5-14. (2/2011). **Times Cited 1**
- [4] **T. Ghebrab** and P. Soroushian, “*Mechanical Properties of Hydrated Cement Paste: Development of Structure-Property Relationships*,” International Journal of Concrete Structures and Materials, Vol. 4, No. 1, 2010, pp. 37-43. (6/2010). **Times Cited 9**
- [3] P. Soroushian, **R.U.D. Nassar**, H. Chowdhury, **T. Ghebrab**, “*Testing Concrete Durability in Sewer Environment*,” Journal Proceedings of the Institution of Civil Engineers - Construction Materials, Vol. 163, N. 1, 2010, pp. 35-44. (2/2010). **Times Cited 1**
- [2] P. Soroushian, H. Chowdhury, **T. Ghebrab**, “*Evaluation of Water-Repelling Additives for Use in Concrete-Based Sanitary Sewer Infrastructure*,” ASCE Journal of Infrastructure, Vol. 15, No. 2, pp. 106-110. (6/2009). **Times Cited 3**
- [1] P. Soroushian, O. Simsek, M. Elzafraney, **T. Ghebrab**, “*Compatibility of Cereal Straw with Hydration of Cement*,” Journal of Solid Waste Technology & Management, Vol. 35, No.1, pp. 1-6. (2/2009). **Times Cited 2**

#### Peer-Reviewed Conference (corresponding author bolded)

- [2] **A. Nejat**, M. Darwish, T. Ghebrab, “*BIM Teaching Strategy for Construction Engineering Students*,” American Society for Engineering Education (ASEE) Annual Conference (7/2012)
- [1] **M. Darwish**, A. Nejat, T. Ghebrab, “*Globalization and the New Challenges for Construction Engineering Education*,” American Society for Engineering Education (ASEE) Annual Conference (7/2012)

## RESEARCH

### Research Interest

- Performance of cement based materials under adverse environments
- Effect of mineral/chemical admixtures on the structure-property relationships of cement based materials
- Modeling of mechanical and physical properties of cementitious materials containing nano-size mineral admixtures
- Effect of mineral admixtures on concrete containing recycled aggregates.

## Research Reports

- P. Jayawickrama, T. Ghebrab, W. Lawson, “A Comprehensive Field Guide for Reconfiguration of MSE Reinforced around Obstructions,” Texas Department of Transportation. (2015)
- M. Won, T. Ghebrab, P. Choi, S. Ha, “Minimizing Premature Distresses in Continuously Reinforced Concrete Pavement,” Texas Department of Transportation. (2013)

## Funded Contracts, Grants, and Sponsored Research (PI Listed First)

- [9] S. Ekwaro-Osire, J. Aranha, **T. Ghebrab**, S. Senadheera, V. Uddameri, D. Luis, G. Perry, “International University Partnership for the Establishment of Postgraduate Programs in Ethiopia with the British Council,” \$1,098,000. (2016)
- [8] P. Jayawickrama, W. Lawson, **T. Ghebrab**, “Field Guide for MSE Reconfiguration,” Texas Department of Transportation, \$59,196. (2015)
- [7] D. Liang, D. Smith, S. Morse, **T. Ghebrab**, “RAPID: Collection of Perishable Data on Storm Shelters, Wind Speed Indicators, and Glazing after the May 20, 2013 Tornado in Moore, OK,” NSF, \$30,742. (7/2013)
- [6] M. Won and **T. Ghebrab**, “Minimizing Premature Distresses in Continuously Reinforced Concrete Pavement,” Texas Department of Transportation, \$212,945. (9/11–8/13)
- [5] **T. Ghebrab**, “Upgrading Classroom Media in CEET,” *TEXO*, Requested: \$20,000, Awarded to the Department: \$6,000. (2/2014)
- [4] **T. Ghebrab**, “Upgrading Classroom Media in CEET,” *TEXO*, Requested: \$20,000, Awarded to the Department: \$10,000. (2/2013)
- [3] **T. Ghebrab**, “Graduate Student Support Fund,” *WCoE and TTU*, \$26,000. (2/2012)
- [2] **T. Ghebrab**, “Upgrading Surveying Laboratory in CEET,” *TEX*, Amount requested: \$20,000, Awarded to the Department: \$10,000. (2/2011)
- [1] **T. Ghebrab**, “Upgrading Structural Laboratory in CEET,” *TEXO*, Amount requested: \$20,000, Awarded to the Department: \$20,000. (2/2010)

## SERVICE

### Service to the Department of Construction Engineering & Engineering Technology

#### *Administrative*

CONE Program ABET Accreditation Coordinator	2015 – Present
Department Chair Advisory Cadre Member	2014 - Present
Construction Engineering Program Coordinator	2014 – Present
Graduate Academic Advisor	2011- Present

#### *Committees*

- [9] Geotech Faculty Search Committee Member 2017
- [8] Geotech Faculty Search Committee Member 2017

[7] Geotech Faculty Search Committee Member	2016
[6] Revision Committee for the Departmental Tenure & Promotion OP Chair	2014
[5] CONE Program Scholarship Committee Chair	2010-2016
[4] ABET Accreditation Committee member	2012
[3] BIM Faculty Search Committee member	2010-2011
[2] Surveying Faculty Search Committee member	2010
[1] Graduate Certificate Program Development Committee member	2010-2012

### **Service to Whitaker College of Engineering**

#### ***Committees***

[4] Distance Learning Committee Member	2013 – 2014
[3] Bioengineering Program Task Force Member	2013 – 2014
[2] Digital Measures Steering Committee Member	2010
[1] College Grade Appeal Board Member	2011

### **Service to Texas Tech University**

#### ***Dean's Representative at Doctoral Dissertation Defenses***

[2] Patrick Thor Kahl, Ph.D., “Refining the Semantics of Epistemic Logic Programs”	2014
[1] Yugendra R. Guvvala, Ph.D., “Programming Models for Computers of Extreme Scale Parallelism,”	2013

#### ***Faculty Senate***

[1] Faculty Senate Member	2014 - 2017
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#### ***Faculty Advisor of University Student Organizations***

[2] Faculty advisor, TTU Habesha Students Association	2012 – Present
[1] Faculty advisor, TTU Baha’i Students Association	2012 – 2016

### **Service to Profession of Engineering**

#### ***Journal Reviewer for***

[4] Journal of Cement and Concrete Composites,	2017
[3] Journal of Cement and Concrete Composites,	2015
[2] ASCE Journal of Materials in Civil Engineering	2013
[1] ASCE Journal of Materials in Civil Engineering	2013

***Professional Consultancy Service***

- [2] Litigation expertise, for Law Office of P. Howard Bailey, Jr. on a case related to water leakage to basement a residential building in Lubbock, TX 2012
- [1] Litigation expertise, for Law Office of Travis S. Ware on a case related to foundation problem of a residential building in Lubbock, TX 2011

***Professional Judge Service***

Judge for the Annual Outstanding Construction Award Competition organized by AGC – Texas Building Branch 2010