

Professor Danny Che

Ohio University
Civil Engineering
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Education

PhD, Arizona State University, 2015.

Major: Civil Engineering (Water Resources)

Supporting Areas of Emphasis: Water Resource Systems

Dissertation Title: Optimization/Simulation Model for Determining Real-time Optimal Operation of River-Reservoirs Systems During Flooding Conditions

MS, Arizona State University, 2011.

Major: Civil Engineering

Supporting Areas of Emphasis: Water Resource Systems

BS, Arizona State University, 2009.

Major: Civil Engineering

Supporting Areas of Emphasis: Environmental Engineering

Academic and Professional Positions

Academic - Post-Secondary

Assistant Professor, Ohio University. (August 2016 - Present).

Graduate Teaching Associate, Arizona State University. (August 2011 - August 2015).

Graduate Research Assistant, Arizona State University. (May 2011 - August 2014).

Adjunct Engineering Faculty, Scottsdale Community College. (January 2014 - May 2014).

Professional

Conference Chairperson, 2019 Ohio River Basin Symposium at Ohio University, Athens, Ohio. (October 2018 - October 2019).

Water Resources Engineer, Atkins North America Inc., Phoenix, AZ. (August 2015 - August 2016).

Licensures and Certifications

Engineering in Training, Arizona State Board of Technical Registration. (January 28, 2014 - Present).

Professional Memberships

Associate Member, American Society of Civil Engineers. (March 2016 - Present).

Chi Epsilon, the National Civil Engineering Honor Society. (April 18, 2008 - Present).

Development Activities Attended

- Conference Attendance, "American Geophysical Union Fall Meeting 2020," Virtual Meeting. (December 2020).
- Conference Attendance, "American Geophysical Union Fall Meeting 2019," San Francisco, CA, United States. (December 2019).
- Conference Attendance, "2019 Ohio River Basin Symposium at Ohio University," Ohio University, Athens, Ohio, United States. (October 2, 2019 - October 4, 2019).
- Conference Attendance, "American Geophysical Union Fall Meeting 2018," Washington, D.C., United States. (December 2018).
- Conference Attendance, "Ohio River Consortium for Research and Education Symposium 2018," Thomas More University, Crestview Hills, Kentucky, United States. (October 2018).
- Conference Attendance, "American Geophysical Union Fall Meeting 2017," New Orleans, LA, United States. (December 2017).
- Conference Attendance, "Ohio River Consortium for Research and Education," Huntington, WV, United States. (September 2017).
- Conference Attendance, "Ohio River Consortium for Research and Education," Youngstown State University, Youngstown, Ohio. (September 2016).

TEACHING

Teaching Experience

Ohio University

- CE 3400, Fluid Mechanics, 6 courses.
- CE 3410, Hydraulics Laboratory, 4 courses.
- CE 3420, Applied Hydraulics and Hydrology, 5 courses.
- CE 4570, Water Resources Engineering, 3 courses.
- CE 5900, Water Resources Engineering, 1 course.
- CE 6900, Water Resources Systems, 1 course.
- UC 1900, Learning Community Seminar (Civil Engineering), 2 courses.

Directed Student Learning

- Doctoral Dissertation Committee Chair, "Development of a GIS-Based Modeling for the Quantification of Groundwater in Aquifers in Urban Hilly Areas," Civil Engineering. (August 2021 – Current).
Advised (advisee): Mamoon Kareem
- Master's Thesis Committee Chair, "Efficient and Effective Ways to Manage Water through ODOT's Temporary Fills during Construction," Civil Engineering. (January 2021 – Current).
Advised (advisee): David Rothwell

Master's Thesis Committee Chair, "Integrated Hydrologic Modeling for Trans-Border Watershed Study in Arizona and Northern Mexico," Civil Engineering. (January 2021 – Current).
Advised (advisee): Binay Sapkota

Master's Program Committee Chair, Civil Engineering. (August 2018, DNF).
Advised (advisee): John Capuano

Master's Thesis Committee Member, "Potential use of abandoned underground coal mine AS-029 as a reservoir for ground source heat pumps, Athens, OH," Geological Sciences. (July 2020).
Advised: Andreeana Martorell

Dissertation Committee Member, Chemical and Biomolecular Engineering. (February 2019 - May 2020).
Advised: Mohiedin Hariri

Master's Thesis Committee Member, "Real Time Investigations of Aggregation of Sulfur-Rich Asphaltene," Civil Engineering. (August 2018 - May 2020).
Advised: Christian Hammond

Master's Thesis Committee Member, Civil Engineering. (February 2019 - March 2020).
Advised: Jacob Campbell

Master's Thesis Committee Member, "Fatigue Failure for Local Roads in Ohio that Use Road User Maintenance Agreements Due to the Increase in Truck Traffic," Civil Engineering. (July 2019 - August 2019).
Advised: Praveen Gopallawa

Master's Thesis Committee Member, "Statistical Analysis for Mine Pool Formation and AMD Prediction in Abandoned Underground Mines, Eastern Ohio," Other (Within Ohio University). (May 2018 - April 2019).
Advised: Rebecca Steinberg

HTC Tutorial, "AutoCAD Civil 3D Application in Civil Engineering," Civil Engineering. (August 2017 - May 2018).
Advised: Garrett Dildine

Master's Thesis Committee Chair, "Development of a Multi-Purpose Reservoirs Systems Operation Model for Water Resources Sustainability," Civil Engineering. (August 2016 - May 2018).
Advised (advisee): Adil Mounir

Master's Thesis Committee Member, "Evaluating a Bioretention System in Marietta, Ohio," Civil Engineering. (April 2018).
Advised: Andrew Long

Master's Thesis Committee Member, "Selective Precipitation of Iron in Acid Mine Drainage using Iron Oxidizing Bacteria Introduction," Civil Engineering. (April 2018).
Advised: John Timmons

Master's Thesis Committee Member, "GIS Uses for Modeling Subsurface Conditions in Ohio Coal Mines," Civil Engineering. (December 2017).
Advised: Kurt Kleski

Master's Thesis Committee Member, "Impact of New Passenger Rail Stations on Passenger Characteristics and Spatial Distribution: Hiawatha Service Case Study," Civil Engineering. (May 2017).
Advised: Tyler Collins

Awards and Honors

2017 Russ College Outstanding Undergraduate Teaching Award, Russ College of Engineering and Technology. (April 14, 2017).

Marvin E. and Ann D. White Russ College Departmental Teaching Award (2021 – 2022)

Ohio University Russ College Stocker Faculty Enrichment Awards (2017, 2018, 2019)

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles

Mounir, A., Che, D., Cesar, G.-P., Agustin, R.-M. (2019). Development of a Reservoir System Operation Model for Water Sustainability in the Yaqui River Basin. *Journal of Water Resources Planning and Management*, 145(9).
[ascelibrary.org/doi/10.1061/%28ASCE%29WR.1943-5452.0001098](https://doi.org/10.1061/%28ASCE%29WR.1943-5452.0001098)

Che, D., Mays, L. W. (2017). Application of an Optimization/Simulation Model for Real-Time Flood Control Operation of River-Reservoir Systems. *Water Resources Management Journal*, 31(7), 2285-2297. link.springer.com/article/10.1007/s11269-017-1644-3

Stafford, N., Che, D., Mays, L. (2015). Optimization Model for the Design of Infiltration Basins. *Water Resources Management*, 29(8), 2789-2804.
link.springer.com/article/10.1007%2Fs11269-015-0970-6

Che, D., Mays, L. (2015). Development of an Optimization/Simulation Model for Real-Time Flood-Control Operation of River-Reservoirs Systems. *Water Resources Management*, 29(11), 3987-4005. link.springer.com/article/10.1007/s11269-015-1041-8

Moura, A., Che, D., Mayer, A., Vivoni, E. (2014). Hydrologic Assessment of Proposed Reservoirs in the Sonora River Basin, Mexico, under Historical and Future Climate Scenarios. *Hydrological Science Journal*, 60(1), 50-66.
www.tandfonline.com/doi/abs/10.1080/02626667.2013.878462

Che, D., Nangare, M., Mays, L. (2014). Determination of Clark's Unit Hydrograph Parameters for Watersheds. *Journal of Hydrologic Engineering*, 19(2), 384-387.
ascelibrary.org/doi/abs/10.1061/%28ASCE%29HE.1943-5584.0000796

Che, D. C., Nangare, M., Mays, L. W. (2014). Determination of Optimal Unit Hydrographs and Green-Ampts Parameters for Watersheds. *Journal of Hydrologic Engineering*, 19(2), 375-383. ascelibrary.org/doi/abs/10.1061/%28ASCE%29HE.1943-5584.0000798

Conference Proceedings

Che, D., Mays, L. (2015). *A Real Time Optimization/Simulation Model for River-Reservoir Systems*. Sanford, AZ: Arizona Floodplain Management Association Fall 2015 Conference.

Che, D., Nangare, M., Mays, L. (2011). *Optimal Determination of Unit Hydrograph and Loss Parameters using Nonlinear Programming Model*. Tucson, AZ: Arizona Floodplain Management Association Spring 2011 Conference.

Presentations Given

Haidar, M. A. I. (Presenter & Author), Myers, E. R. (Presenter & Author), Che, D. (Author Only), American Geophysical Union 2020 Fall Meeting, "Sustainable Water Allocation Projection in Yavatmal District through Optimization of Reservoir Operation in the Warda-Penganga Sub-Basin, India," Virtual Conference. (December 2020).

Capuano, J. (Presenter & Author), Che, D. (Author Only), American Geophysical Union 2019 Fall Meeting, "Optimization Model for the Selection and Placement of Green Infrastructure for Runoff Control and Pollutant Removal," American Geophysical Union, San Francisco. (December 2019).

Capuano, J. (Presenter & Author), Che, D. (Author Only), Ohio River Basin Consortium for Research and Education, "Optimization Model for the Selection and Placement of Green Infrastructure for Runoff Control and Pollutant Removal," Ohio University, Athens. (October 3, 2019).

Tahiri, A., Che, D., La, D., Chiron, P., Archmede, B., American Geophysical Union 2018 Fall Meeting, "Flood Routing Model for Water Resources Optimization Algorithms," Washington, D.C. (December 12, 2018).

Che, D. (Author Only), Mounir, A. (Presenter & Author), American Geophysical Union 2017 Fall Meeting, "Development of a Reservoir System Operation Model for Water Sustainability in the Yaqui River Basin," New Orleans. (December 2017).

Che, D. (Author Only), Mounir, A. (Presenter & Author), Ohio River Consortium for Research and Education, "Development of a Reservoir System Operation Model for Water Sustainability in the Yaqui River Basin," Marshall University, Huntington, WV. (September 2017).

Che, D. C. (Presenter & Author), Mays, L. (Author Only), Ohio River Consortium for Research and Education, "Development of an Optimization/Simulation Model for Real-Time Flood-Control Operation of River-Reservoirs Systems," Youngstown State University. (September 28, 2016).

Che, D. (Presenter & Author), Mays, L. (Author Only), Arizona Floodplain Management Association Fall 2015 Conference, "A Real Time Optimization/Simulation Model for River-Reservoir Systems," Sanford, AZ. (November 5, 2015).

Che, D. (Presenter & Author), Robles-Moura, A. (Author Only), Mayer, A. (Author Only), Vivoni, E. (Author Only), American Geophysical Union, "Water Resources Sustainability in Northwest Mexico: Analysis of Regional Infrastructure Plans under Historical and Climate Change Scenarios," San Francisco. (December 2012).

Nangare, M. (Presenter & Author), Che, D. (Author Only), Mays, L. (Author Only), Arizona Floodplain Management Association Spring 2011 Conference, "Optimal Determination of Unit Hydrograph and Loss Parameters Using Nonlinear Optimization," Tucson, AZ. (June 2011).

Contracts, Grants and Sponsored Research

Funded Research

Che, D. (Principal Investigator), Khoury, I. (Co-Principal Investigator), "Research On-Call Task #3: Scour Prediction Tools," Sponsored by ODOT, State, \$56,034.96. (Oct 1, 2021 – Mar 31, 2022).

Kruse, N. (Principal Investigator), Che, D. (Co-Principal Investigator), " Research On-Call 2020-14 Task #8: Assessment and Prioritization of Culverts for Enhanced Fish Passage," Sponsored by ODOT, State, \$59,921.35. (Jun 1, 2021 – Dec 31, 2021).

Che, D. (Principal Investigator), Khoury, I. (Co-Principal Investigator), "Efficient and Effective Ways to Manage Water through ODOT's Temporary Fills during Construction," Sponsored by ODOT, State, \$158,828.43. (Sep 1, 2020 – Feb 28, 2022).

Khoury, I. (Principal Investigator), Che, D. (Co-Principal Investigator), "Proposal to Study the Effect of Liner and Pipe Variation on the Flow of Air," Sponsored by the Motz Corporation, Business, \$3,940.02. (Oct 1, 2019 – Mar 31, 2020).

Naik, B. (Principal Investigator), Che, D. (Co-Principal Investigator), "Grounds Improvement Initiative for the General Mills Wellston, Ohio Plant," Sponsored by GENERAL MILLS INC, Private, \$29,421.00. (Mar 27, 2017 - Nov 26, 2017).

Intellectual Contributions in Submission

Refereed Journal Articles (In-Review)

Haidar, A., Che, D., Mays, L.W. (Submitted Sep 2021). Sustainable Water Allocation in Umarked Taluka through Optimization of Reservoir Operation in the Wardha Sub-basin, India. *Water Resources management*.

Tahiri, A., Che, D., Ladeveze, D., Chiron, P., Archmede, B. (Submitted Sep 2021). Flood Routing Model for Water Resources Optimization Algorithms. *Scientific Reports*

Albo-Salih, H., Mays, L.W., Che, D. (Submitted Aug 2021). Application of an Optimization/Simulation Model for the Real-time Flood Operation of River-Reservoir Systems with One and Two-Dimensional Unsteady Flow Modeling. *Water Resources management*.

SERVICE

Department Service

Committee Member, UNDERGRADUATE RECRUITMENT COMMITTEE. (August 2018 - Present).

Faculty Advisor, American Academy of Environmental Engineers and Scientists. (November 2017 - Present).

Committee Member, LABORATORY ASSESSMENT AND SAFETY COMMITTEE. (August 2017 - Present).

Committee Member, UNDERGRADUATE STUDENT COMMITTEE. (August 2017 - Present).

Faculty Advisor, Chi Epsilon, the National Civil Engineering Honor Society. (April 2017 - Present).

College Service

Committee Member, Russ College Teaching Academy Committee. (January 2020 - Present).

Committee Member, Russ College Website Core Team. (May 2019 - Present).

Committee Member, Library Committee. (June 21, 2018 - Present).

Committee Member, COOPERATIVE EDUCATION COMMITTEE. (June 2018 - Present).

Faculty Advisor, Academy of Environmental Engineers and Scientists. (August 2017 - Present).

Faculty Advisor, Chi Epsilon National Civil Engineering Honor Society. (January 2017 - Present).

Committee Member, Review Committee for the Institute for Sustainable Energy and the Environment (ISEE). (May 2019 - July 2019).

Professional Service

Reviewer, Journal Article, ASCE Journal of Hydrologic Engineering. (August 2020 - Present).

Conference Chairperson, 2019 Ohio River Basin Symposium at Ohio University, Athens, Ohio. (October 2018 - October 2019).

Reviewer, Journal Article, Journal of Water Resources Planning and Management. (February 2019 - Present).

Reviewer, Journal Article, Water. (August 2018 - Present).

Reviewer, Journal Article, Hydrological Sciences Journal. (April 2018 - Present).

Consulting

For Profit Organization, General Mills, Wellston, Ohio. (April 2017 - July 2017).