

Ray H. Chang

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Department of Security & Emergency Services
Embry-Riddle Aeronautical University-Worldwide
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ACADEMIC EMPLOYMENT

EMBRY-RIDDLE AERONAUTICAL UNIVERSITY-WORLDWIDE CAMPUS

- Program Chair, Master of Science in Emergency Services (August 2021-present)
- Assistant Professor, Security and Emergency Services (August 2019-present)

NATIONAL CHENG KUNG UNIVERSITY, TAIWAN

- Adjunct Assistant Professor, International Master Program on Natural Hazards Mitigation and Management (February 2021-present)

OKLAHOMA STATE UNIVERSITY

- Assistant Professor, Fire and Emergency Management Administration Program (August 2015-July 2019)

OTHER EMPLOYMENT

NEW TAIPEI CITY FIRE DEPARTMENT, TAIWAN

Battalion Captain	2008-2010
Fire Officer	2004-2005 and 2007-2008
Lieutenant	2002-2004

PHOENIX FIRE DEPARTMENT, USA

Internship	2006-2007
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EDUCATION

UNIVERSITY OF DELAWARE, Ph.D. in Disaster Science and Management, 2015

ARIZONA STATE UNIVERSITY, M.S. in Fire Service Administration, 2007

CENTRAL POLICE UNIVERSITY (TAIWAN), B.A. in Fire Science, 2002

PUBLICATIONS

Peer-Reviewed

- *Journal Articles*
 - [13] Kuo, Y-S., Lu C-H., Chiu, P-W., Chang, H-C., Lin, Y-Y., Huang, S-P., Wang, P-Y., Chen, C-J., Lin, I-C., Tang, J-S., Chang, Y-H., **Chang, R.**, and Lin, C-H. (2021). "Challenges of Using Instant Communication Technology in the Emergency Department During the COVID-19 Pandemic: A Focus Group Study." *International Journal of Environmental Research and Public Health*. <https://www.mdpi.com/1660-4601/18/23/12463#>
 - [12] Chang, R., Tso, Y-E., Lin, C-H., and Kwesell, A. (2021) "Challenges to the Fire Service-Centric Emergency Management System." *Nature Hazards Review*. [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000523](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000523)
 - [11] Zhang, Y., **Chang, R.**, and Xia, D. (2021). "A Comparison of Firefighting Higher Education Curriculums Between China and the United States." *FIRE: Forum for International Research in Education*, 7(1), 24-41. Retrieved from <https://fire-ojs-ttu.tdl.org/fire/index.php/FIRE/article/view/208>
 - [10] Chang, R. and Trainor, J. (2020). "Balancing Mechanistic and Organic Design Elements: The Design and Implementation of the Incident Command System (ICS)."

International Journal of Mass Emergencies and Disasters, 38(3), 241-267. Retrieved from <http://www.ijmed.org/articles/793/>

- [9] LeNoble, C., Billings, J., Ingraham, J., **Chang, R.**, and Kwesell, A. (2020). "Social Science Considerations for Integrating Aviation Technology." *Journal of Aviation/Aerospace Education and Research*, 29(3). DOI: <https://doi.org/10.15394/jaaer.2020.1848>
- [8] Jung, Y. K., and **Chang, R.** (2020). "Cultural Factors that Kill American Firefighters on the Ground: A Pilot Study." *Journal of Paramedicine and Emergency Response*, 1, 37-47. <https://drive.google.com/file/d/1bkPYEA1XVFlwR2DSii-fX0ccMLRH2gfl/view>
- [7] Chang, R. and Neal, D. (2019). "Promotion and/or Transition: From Fire Officer to Emergency Managers." *Journal of Emergency Management*. DOI: <http://dx.doi.org/10.5055/jem.2019.0402>
- [6] Pan, S., Cheng, Y., Wu, C., **Chang, R.**, Chiu, C., Foo, N., Chen, P., Wang, T., Chen, L., Chen, C., Ong, R., Tsai, C., Hsu, C., Hsieh, L., Chi, C., and Lin, C. (2019). "Association of Injury Pattern and Entrapment Location Inside Damaged Buildings in the 2016 Taiwan Earthquake." *Journal of the Formosan Medical Association*. DOI: <https://doi.org/10.1016/j.jfma.2018.05.012>
- [5] Chang, R., Greer, A., Murphy, H., Wu, H-C, and Melton, S. (2018). "Maintaining the Status Quo: Understanding Local Use of Resilience Strategies to Address Earthquake Risk in Oklahoma." *Local Government Studies*. DOI: <https://doi.org/10.1080/03003930.2018.1552145>
- [4] Wu, C., Lan, F., Chen, B., **Chang, R.**, Chang, W., Pan, S., Fang, P., Lu, C., and Lin, C. (2018). "Respiratory Symptoms Among Search and Rescue Workers who Responded to the 2016 Taiwan Earthquake." *Journal of Occupational and Environmental Medicine*. 75, 639-646. DOI: <http://dx.doi.org/10.1136/oemed-2018-105027>
- [3] Chang, R. and Trainor, J. (2018). "Pre-disaster established Trust and Relationships: Two Major Factors Influencing the Effectiveness of Implementing the ICS." *Journal of Homeland Security and Emergency Management*. DOI: <https://doi.org/10.1515/jhsem-2017-0050>
- [2] Wu, H., Greer, A., Murphy, H., and **Chang, R.** (2017). "Preparing for the new normal: Students and earthquake hazard adjustments in Oklahoma." *International Journal of Disaster Risk Reduction*, 25, 312-323. DOI: <https://doi.org/10.1016/j.ijdrr.2017.09.033>
- [1] Chang, H. (2017). "A literature review and analysis of the Incident Command System." *International Journal of Emergency Management (IJEM)*. 13(1), 50-66. DOI: <https://doi.org/10.1504/IJEM.2017.081193>
- Book Chapters

[4] Chang, R. (2017). Theories of disaster response. In J. Wang (Ed.), *Emergency management: The 13 core courses* (pp. 163-178). Taiwan: Wu-Nan Culture Enterprise.

[3] Chang, R., and Lin, C. (2017). An introduction of incident command system (ICS). In J. Wang (Ed.), *Emergency management: The 13 core courses* (pp. 235-253). Taiwan: Wu-Nan Culture Enterprise.

[2] Chang, R., and Wang, J. (2017). Disaster management: Critical concepts. In J. Wang (Ed.), *Emergency management: The 13 core courses* (pp. 1-20). Taiwan: Wu-Nan Culture Enterprise.

[1] Kuo, N., Hung, T., and **Chang, R.** (2017). The emergency operations center (EOC). In J. Wang (Ed.), *Emergency management: The 13 core courses* (pp. 207-233). Taiwan: Wu-Nan Culture Enterprise.

Editor Reviewed

- Journal Articles

Chang, H. (2017). "The limitations of using the American Incident Command System." *Chinese Journal of Risk, Disaster & Crisis Research*. 3, pp. 1-27

- Book Chapters
Chang, H. (2017). From gas explosions to Earthquakes: case studies of disaster response in Taiwan. In Masys A., Lin L. (eds) Asia-Pacific Security Challenges. Advanced Sciences and Technologies for Security Applications (pp. 221-242). USA: Springer. DOI: https://doi.org/10.1007/978-3-319-61729-9_10
- Professional reports, Invited publications, and others
Chang, R. (2020). A Bridge to Success: An Analysis of FEMA Higher Education Program Regional Engagement Reports (2017-2019). FEMA Higher Education Program. https://training.fema.gov/hiedu/docs/latest/2020_ray_hsenho_chang_a_bridge_to_success.pdf
Chang, R. (2018). Disaster preparedness public education in the U.S.: Understand disasters. In Wang, J., Shan, H., Ma, S., and Ma, K. (Ed.), 2017 disaster risk reduction education newsletters (pp. 38-43). Taipei, Taiwan: Ministry of Education, Taiwan. [ISBN 978-986-05-6258-3]
Lin, C., Chang, W. H., Ma, I. C., Wu, C-L., Chen, P. S., Lu, T-H., **Chang, R.** Lu, C-H., Fang, P-H., and Yang, Y. K. (2018). The correlations between personality characteristics, mission contents, social support and risks of post-traumatic stress disorder among emergency medical technicians: A cross-sectional study for rescuers who responded to the 2016 Taiwan earthquake [Abstract]. Resuscitation, 130(Supplement 1) e142. DOI: <https://doi.org/10.1016/j.resuscitation.2018.07.306>
Chang, R. (2017, October). Learning from disasters: 4 case studies of major disasters in Taiwan. IAEM Bulletin, p. 22.
Chinese Newspaper Articles (2014-present, see pp. 13-15 below).
Chang, H. (2008). "Locating New Fire Stations: Methods and Considerations." *2008 Fire Safety Annual Report. New Taipei City, Taiwan.*
Tsai, W., **Chang, H.**, & Shen, T. (2008). "Fire Ground Personnel Accountability System." *Journal of Disaster Mitigation and Rescue, Central Police University, 10*
Chang, H. (2007), "A Comparison of EMS Systems Between Taiwan and the U.S." *Fire Engineering Magazine*, pp. 111-117. U.S.A.
Chang, H. (2005). "Safety Considerations When Responding to HAZMAT, Gas Exploration, and Fire Incidents." *National Firefighters' Handbook of Fire Tactics and Fire Ground Safety in Taiwan*, pp. 58-60. National Fire Agency, Taiwan.

Conference Proceedings

- Tso, Y., and Chang, R. (2018). "Case Studies and Analyses of Major Disasters in Taiwan: From 2014 to 2016." Conference Proceedings, 2018 Taiwan Association for Schools of Public Administration and Affairs (TASPAA) Annual Conference. Taipei, Taiwan.
- Chang, H., Greer, A., Murphy, H., and Wu, T. (2018). "Challenges on Managing a New Hazard: Earthquake Mitigation and Preparedness in Oklahoma." Conference Proceedings, 2018 South Political Science Association Annual Conference. New Orleans, LA (Passed a blind review process).
- Chang, H. (2017). "From Gas Explosion to Earthquake: Case Study of Disaster Response in Taiwan." Conference Proceedings, *6th International Symposium on Environmental Sociology in East Asia*. Taipei, Taiwan: National Taiwan University (Passed a blind review process).
- Chang, H. (2016). "A Content Analysis of the Incident Command System." Conference Proceedings, *2016 Current Issues on Political Science Workshop* (pp. 1-23). Taipei, Taiwan: National Taiwan University (Passed a blind review process).
- Chang, H. and Shen, T. (2008). "In the Aftermath of Hurricane Katrina: A Review of Taiwanese Disaster Preparedness Organization." Conference Proceedings, *2008 Annual Disaster Management Symposium of Taiwan Disaster Management Society*, Taipei, Taiwan (Passed a blind selection process).

GRANTS, FELLOWSHIPS, AWARDS, & CERTIFICATES

Grants

- Internal Grants (Total: \$6,000)
 - DEAN'S INCENTIVE GRANT; College of Arts and Science, Oklahoma State University, 2016 and 2017 (\$3,000 each year; total \$6,000).
- External Grants and Contracts (Total: \$49,729)
 - Design and organize "Multi-organizational Disaster Tabletop Exercise in Taipei City." Taipei City Fire Department, Taiwan, 2022 (\$3,000 and travel, accommodations, and meals in Taipei City). Individual Award.
 - Update the National Homeland Security Exercise Evaluation Guidebook on Critical Infrastructure (CI). Executive Yuan (the Premier's Office) in Taiwan (\$7,000). Individual Award.
 - Chang, R (PI). (2021). Completing an analysis report on how to organize multi-departmental disaster drills. AU Optronics Corporation (\$15,229 and travel, accommodations, transportation, and meals in Taiwan; ERAU Award ID: 000942-00001A).
 - Develop and teach "Online Training Courses on Designing and Implementing Disaster Exercises." Taiwan Society of Disaster Medicine, Taiwan, 2021 (\$8,000). Individual Award.
 - Develop and teach "A One-Week Virtual Workshop on Designing and Organizing a Multi-organizational Disaster Tabletop Exercise." National Department of Environmental Protection and New Taipei City Fire Department, Taiwan, 2020 (\$4,000). Individual Award.
 - Design and organize "Multi-organizational Disaster Tabletop Exercise in Taipei City." Taipei City Fire Department, Taiwan, 2020 (\$3,000 and travel, accommodations, and meals in Taipei City, ERAU Award ID: 000748-00001A).
 - Write a report on "FEMA Regional Engagement Trend Analysis." Federal Emergency Management Agency (FEMA), USA, 2019 (\$3,500). Individual Award.
 - Develop and Teach "Disaster Management and Incident Command-Basic & Advance Courses." Taipei City Fire Department, Taiwan, 2018 and 2019 (\$3,000 each year; total \$6,000).

Fellowships

MARY FRAN MYERS SCHOLARSHIP (full coverage to attend the annual conference)
Natural Hazards Center, the University of Colorado at Boulder, 2012

EIIP SCHOLARSHIP (\$5,000)
International Association of Emergency Managers, 2011

SCHOLARSHIP OF GOVERNMENT SPONSORSHIP FOR OVERSEAS STUDY (\$32,000)
Ministry of Education, Republic of China (R.O.C), 2010

Awards & Certificates

DEAN'S APPRECIATION AWARD-FIRST YEAR FACULTY MEMBER
College of Arts and Sciences, Embry-Riddle Aeronautical University-Worldwide, Daytona Beach, FL, 2019-2020

OUTSTANDING RESEARCH AWARD
Department of Political Science, Oklahoma State University, Stillwater, OK, 2017-2018

GOLD RECOGNITION - POSTER SHOWCASE
International Association of Emergency Managers (IAEM) 65th Annual Conference, Long Beach, CA, 2017

DR. TOM PHELAN AWARD - OUTSTANDING POSTER
FEMA Emergency Management Institute, Emmitsburg, 2017

PEOPLE'S CHOICE - POSTER AWARD WINNER
FEMA Emergency Management Institute, Emmitsburg, 2017

ASSOCIATE EMERGENCY MANAGER
International Association of Emergency Managers, 2013-2018

RESEARCH UNDER REVIEW OR IN PROGRESS

Articles under review

- Chang, R., Shie, W-C., Hsu, Y-H, and Hur, H. "Anticipation or resilience in times of emergent crisis? COVID-19 responses in the U.S., Taiwan, and South Korea." *Journal of Emergency Management* (1st R&R).
- Chang, R., Peng, Y-T., Choi, S., and Cai, C. "Applying Artificial Intelligence (AI) to improve Fire Response Activities." *Journal of Disaster Management Science and Technology* (1st R&R).
- Shen, S., Chang, R., Kim, K., and Julian, M. "Challenges to Maintaining Disaster Relief Supply Chains in Island Communities: Disaster Preparedness and Response in Honolulu, Hawai'i." *Natural Hazards* (1st R&R).

Articles in development

- Maintaining the Supply Chain after disasters in Hawaii. Collaborate with Suwan Shan (the University of Hawaii at Manoa).
- A gap of crisis communication: content analysis on the press conferences and media Q&As in Taiwan during the COVID 19 outbreak. Collaborate with Yi-En Tso (Soochow University, Taiwan) and Jack Chien-Hao Lin (National Taiwan University-Hospital).
- Cultural, social, and economic factors that influence the earthquake preparedness in Oklahoma. Collaborate with Alex Greer (SUNY-Albany), Haley Murphy (Oklahoma State University), and Tristan Wu (University of North Texas).

CONFERENCE PRESENTATION/PUBLIC SPEECH

English

- Chang, R. (October, 2021). NIMS/ICS and ESFs as a case study in developing capabilities for EM and HS consequence management. Guest Lecture at EHC 344: Emergency Preparedness. College of Emergency Preparedness, Homeland Security, and Cyber Security (CEHC), University at Albany-SUNY. Albany, NY. Virtual Presentation.
- Chang, R. (August, 2021). Policies in a crisis: Responding to the coronavirus outbreak and future challenges. Keynote speaker on the 2021 Social Impact Forum: COVID-19 Disaster Risk Management and Governance. Epidemic Prevention Scientific Research Center, National Cheng Kung University, Taiwan. Virtual Presentation.
- Chang, R. (May, 2021). Comparison of COVID-19 Responses in Taiwan, South Korea, and the U.S. Brownbag Lunch and Learn Series. College of Arts and Science, Embry-Riddle Aeronautical University-Worldwide Campus. Virtual Presentation.
- Shie, W-C and Chang, R. (November, 2020). Anticipation vs. Resilience: The COVID-19 Response Strategies in the U.S., South Korea, and Taiwan. Research Sharing Luncheon. Fellows Society, Florida State University. Virtual Conference.
- Tawalbeh, R. and Chang, R. (October, 2020). Role Conflict Among EMS Providers and Their Willingness to Report to Duty During Disasters. Fire-Rescue International (FRI) Annual Conference. Virtual Conference.
- Chang, R. (July, 2020). Regional Engagement Trend Analysis. FEMA National Training and Education Divisions-Higher Education Program, Online Webinar.
- Chang, R. and Shen, S. (March, 2020). A Preliminary Investigation of Factors Affecting Disaster Relief Preparedness to Coastal Hazards in Hawaii. Pacific Risk Management 'Ohana (PRiMO) Conference. Honolulu, HI. (Passed a blind selection process).
- Chang, R., LeNoble, C., Billing, J., and Kwesell, A. (March, 2020). Integrating Aviation Technology, Emergency Services, and Human Resilience: Considerations from Social Scientists. National Training Aircraft Symposium (NTAS) Annual Conference. Daytona Beach, FL. (Passed a blind selection process).
- Chang, R. and Billing, J. (November, 2019). Research topics and methods. Guest Lecture at CDM 4400: Research in Crisis and Disaster Management. Department of Security and Emergency Services, University of Central Missouri. Warrensburg, MO.

- Chang, R. (November, 2019). Evolution of Earthquake Preparedness and Response in Taiwan. Guest Lecture at CDM 4015: Catastrophic Readiness. Department of Security and Emergency Services, University of Central Missouri. Warrensburg, MO.
- Chang, R. and Billing, J. (October, 2019). Research projects and updates. Invited Presenter at College of Emergency Preparedness, Homeland Security, and Cyber Security (CEHC), University at Albany-SUNY. Albany, NY.
- Chang, R. and Billing, J. (October, 2019). Qualitative Research and methods. Guest Lecture at EHC 310: Research Seminar in Emergency Preparedness course section. College of Emergency Preparedness, Homeland Security, and Cyber Security (CEHC), University at Albany-SUNY. Albany, NY.
- Chang, R. (October, 2019). The Incident Command System and Leadership. Guest Lecture at EHC 345: Leadership and Ethics course section. College of Emergency Preparedness, Homeland Security, and Cyber Security (CEHC), University at Albany-SUNY. Albany, NY.
- Chang, R. and Palmer, J. (July, 2019) Combining Practitioners and Academicians: Conversations from Both Sides. Panelist at the Researchers' Meeting, Natural Hazards Workshop, Bloomfield, CO.
- Chang, R., Greer, A., Haley, M., and Wu, H-C (July, 2019). Maintaining the Status Quo: Understanding Local Use of Resilience Strategies to Address Earthquake Risk in Oklahoma. Poster Presentation at the Natural Hazards Center Annual Workshop. Broomfield, CO. (Passed a blind selection process).
- Chang, R. (June, 2019). Special Interest Group (SIG): Theory and Research. 21th FEMA Annual Emergency Management Higher Education Symposium. Emmitsburg, MD.
- Chang, R., Tso, Y-E, and Lin, C-H (July, 2018). Disaster Management System in Taiwan: Case Studies, Qualitative Interviews, and Analyses. Poster Presentation at the Natural Hazards Center Annual Workshop. Broomfield, CO.
- Chang, R., Greer, A., Murphy, H., and Wu, H-C (June, 2018). General Barriers of Preparing Earthquake in Oklahoma. 20th FEMA Annual Emergency Management Higher Education Symposium. Emmitsburg, MD. (Passed a blind selection process).
- Chang, R. (June, 2018). Special Interest Group (SIG): International Emergency Management. 20th FEMA Annual Emergency Management Higher Education Symposium. Emmitsburg, MD.
- Chang, R. (June, 2018). Special Interest Group (SIG): Theory and Research. 20th FEMA Annual Emergency Management Higher Education Symposium. Emmitsburg, MD.
- Chang, R. (May, 2018). Balancing Resilience and Anticipation: Strategies to Prepare for Earthquakes in Oklahoma. Keynote Speaker for the 2018 International Workshop on Disaster Risk Reduction and Preparedness, Taipei City Fire Department, Taiwan.
- Chang, R. and Melton, S. (February, 2018). Leveraging Professional Associations to Strengthen the EM Student Experience. Emergency Management/Homeland Security Higher Education Regional Academic Collaborative Region VI. Denton, TX.
- Chang, R., Murphy, H., Wu, H-C, and Greer, A. (January, 2018). Challenges on Managing a New Hazard: Earthquake Mitigation and Preparedness in Oklahoma. 2018 South Political Science Association Annual Conference. (Passed a blind selection process).
- Chang, R. (November, 2017). Case Studies of Disaster Response in Taiwan. Invited Presenter at the 65th International Association of Emergency Manager (IAEM) Annual Conference. Long Beach, CA. (Passed a blind selection process).
- Chang, R. (November, 2017). Balancing Mechanistic and Organic Design Elements: the Implementation of the Incident Command System. Poster Presentation at the 65th International Association of Emergency Manager (IAEM) Annual Conference. Long Beach, CA. (Passed a blind selection process).
- Chang, R. (October, 2017). From Gas Explosion to Earthquake: Case Studies of Disaster Response in Taiwan. Invited Presenter at the 6th International Symposium on Environmental Sociology in East Asia. Taipei, Taiwan. (Passed a blind selection process).
- Chang, R. (July, 2017). How Do People Implement the Incident Command System: Qualitative Interviews to Senior ICS Users? Poster Presentation at the Natural Hazards Center Annual Workshop. Broomfield, CO.

- Chang, R., Greer, A., Wu, H-C, and Murphy, H. (July, 2017). Community Risk Perceptions and Hazard Adjustment Adoption in Response to Induced Seismicity in Oklahoma. Poster Presentation at the Natural Hazards Center Annual Workshop. Broomfield, CO.
- Chang, R. (June, 2017). The Implementation of Incident Command System: Qualitative Interviews and Analysis. Poster Presentation at the 19th FEMA annual Emergency Management higher Education Symposium. Emmitsburg, MD (Passed a blind selection process).
- Chang, R., Murphy, H., Wu, H-C, and Greer, A. (March, 2017). The Effect of Individual Belief in Government's Ability to Prevent Disasters on Household Preparedness. 2017 Midwest Political Science Association Annual Conference. (Passed a blind selection process).
- Chang, R., Greer, A., Murphy, H., and Wu, H-C (November, 2016). Roundtable Discussions on Oklahoma Disasters. Panelist at the 2016 Oklahoma Political Science Association Annual Meeting.
- Chang, R. (December, 2015). Fundamentals of Disaster Management and Response. Invited Presenter at the International Master Program on Natural Hazards Mitigation and Management, National Cheng Kung University, Taiwan.
- Chang, R. (November, 2014). In the Aftermath of the Massive Gas Explosion in Taiwan. Invited Presenter at the Chinese-American Professionals Association of Metropolitan Washington D.C. Annual Workshop. Beltsville, MD.
- Chang, R. and Trainor, J. (July, 2014). An Analysis of Incident Command System. Invited Presenter at the Natural Hazards Center Annual Workshop. Broomfield, CO. (Passed a blind selection process).
- Chang, R. (June, 2014). Understanding the Natural of Incident Command System. Invited Presenter at the 16th Emergency Management Higher Education Symposium. Emmitsburg, MD (Passed a blind selection process).
- Chang, R. (May, 2014). An Analysis of Incident Command System. Poster Presentation at the 50th anniversary Workshop of Disaster Research Center. Newark, DE.
- Chang, R. (November, 2013). Media and Disasters. Guest Speaker at Wilmington University. Wilmington, DE.
- Chang, R. (July, 2012). Managing Personnel and Resources in Disaster Scenes. Invited Presenter at the Natural Hazards Center Annual Workshop. Broomfield, CO (Passed a blind selection process).
- Chang, R. (March, 2011). Introduction of Taiwan and Its History. Invited Presenter at School of Public Policy and Administration, University of Delaware DE.
- Chinese*
- Hsu, Y-H., **Chang, R.**, Shie, W-C., and Hur, H. (November, 2021). Policy Analyses and Implications: Covid-19 Response in U.S., Taiwan, and South Korea. Invited Presenter at 2021 Taiwan Association for Schools of Public, Taiwan (Passed a blind selection process).
- Chang, R. (September, 2021). Operating the Emergency Operations Center (EOC) during COVID-19 pandemic: U.S. experience. Invited Speaker for the Taipei City EOC, Taipei City, Taiwan.
- Chang, R. (September, 2021). De-centralizing decision-making processes: reconstruct the Emergency Operations Center (EOC). Invited Speaker for the Taipei City EOC, Taipei City, Taiwan.
- Chang, R. (August, 2021). U.S. Incident Command System (ICS). Keynote Speaker on the Annual Training Series for National Homeland Security Exercise Evaluators, the Office of Homeland Security in Executive Yuan (the Premier's Office), Taiwan. Virtual Presentation.
- Chang, R. (June, 2021). Incident Command System Seminar. Invited Speaker for An Nan Hospital, Taiwan. Virtual Presentation.
- Chang, R. (June, 2021). U.S. Homeland Security Exercise Evaluation Program (HSEEP). Keynote Speaker on the Annual Training Series for National Homeland Security Exercise Evaluators, the Office of Homeland Security in Executive Yuan (the Premier's Office), Taiwan. Virtual Presentation.
- Chang, R. (June, 2021). U.S. Emergency Management Training and Education Systems. Invited Speaker for the Center for Societal Risk and Public Crisis Management Studies, Nanjing University, China. Virtual Presentation.
- Chang, R. (March, 2021). Corporate Disaster Management. Annual Safety Conference, AU Optronics Corporation, Virtual Conference.

- Chang, R. (December, 2019). Fundamentals of the Incident Command System. Invited Speaker for the Taipei City Urban Search and Rescue Team, Taipei City, Taiwan.
- Chang, R. (May, 2019). Emergency Management Research in the United States. Invited Speaker for the Department of Public Administration, National Chengchi University, Taiwan.
- Chang, R. (May, 2019). An Introduction of Emergency Management. Invited Speaker for the Department of Social and Public Affairs, Taipei Municipal University of Education, Taiwan.
- Chang, R. (May, 2019). Anti-Terrorism Planning and Exercises. Invited Speaker for National Special Operations Group, National Police Administration, Taiwan.
- Chang, R. (May, 2019). Disaster Planning and Preparedness. Invited Speaker for Emergency Response Command Academy (ERCA), New Taipei City Fire Department, Taiwan.
- Chang, R. (October, 2018). Disaster and Fire Safety Management for Industrial Facilities. Keynote Speaker at the International Fire Safety Conference for High-Tech Industrial Facilities, Environmental Protection and Development Foundation in Tainan Science Park, Taiwan.
- Chang, R. and Tso, Y-E (April, 2018). Case Studies and Analyses of Major Disasters in Taiwan: From 2014 to 2016. Invited Presenter at 2018 Taiwan Association for Schools of Public, Taiwan Administration and Affairs (TASPAA) Annual Conference. Taipei, Taiwan. With Tso, Yi-En.
- Chang, (May, 2018). The Incident Command System. A one-day workshop organized by Taoyuan General Hospital, Ministry of Health and Taoyuan Fire Department, Ministry of Interior, Taiwan.
- Chang, (June, 2016). After the 2015 Flash Fire Accident in Ba-Xian Theme Park; What Can be improved. Keynote Speaker at the Forum of Public Safety, United Daily News Group, Taiwan.
- Chang, (June, 2016). Disaster Response and the Incident Command System. Keynote Speaker at the 2016 Annual Conference of Taiwan Society of Emergency Medicine, Taiwan.
- Chang, R. (June, 2016). Disaster Response System and the 2016 Tainan Earthquake Response" Invited Presenter at the Taiwan Society of Emergency Medicine, Taiwan.
- Chang, R. (June, 2016). A Content Analysis of the Incident Command System. Invited Speaker for the 2016 Current Issues on Political Science Workshop, National Taiwan University, Taiwan (Passed a blind selection process).
- Chang, R. (December, 2015). Disaster Response. Invited Presenter at the Taipei City Government, Taiwan.
- Chang, R. (December, 2015). Disaster Response and the Incident Command System. Invited Presenter at the Taiwan Society of Disaster Medicine, Taiwan.
- Chang, R. (May, 2015). Disaster Management Organizations and Systems in the United States. Invited Presenter at the Taipei City Fire Department, Taiwan.
- Chang, R. (August, 2014). Lessons Learned from Disasters. Keynote Speaker for the Opening Ceremony of the Disaster Management Graduate Program, Central Police University, Taiwan.
- Chang, R. (July, 2014). A Social Inquiry of Disaster Management: Policy, Society, and Future Developments. Invited Speaker for Professional Development Presentation Series at the National Science and Technology Center for Disaster Reduction (NCDR), Taiwan.
- Chang, R. (June, 2013). Applying for CEM/AEM. Invited Presenter at National Fire Agency, Taiwan.
- Chang, R. (September, 2012). Taiwanese Disaster Management Organizations, Challenges, and the Future Trends. Invited Presenter at the Great DC Metropolitan Forum for Taiwanese Scholars and Students. Washington D.C.

PROPOSAL SUBMITTED

- 2021 "Increase Disaster Response Capabilities in Taiwan" Submitted to American Institute in Taiwan Humanitarian Assistance and Disaster Relief Program (\$20,000; Declined).
- 2019 "Enabling Program" Submitted to the National Hazards Center and National Science Foundation (Declined).
- 2019 "An Innovative Fire Ground Personnel Accountability System Using Deep Neural Networks Based Image Processing and Recognition at Fire Scenes." Submitted to Taiwan Ministry of Science and Technology: Project for Junior Research (\$150,000; Declined) with Yan-Tsung Peng, National Chengchi University (Taiwan).

- 2018 "Applying Artificial Intelligence (AI) to Improve Wildfire Response Activities." Submitted to DHS/FEMA Firefighter Safety Research and Development Activity Grant (Application #: EMW-2018-FP-00466; \$800,000; Declined) with Changjie Cai, University of Oklahoma.
- 2018 "Developing ICS Training Materials and Courses." Submitted to Taipei City Fire Department, Taiwan (Awarded and granted \$6,000 in two years).
- 2017 "Hierarchy or Network: Decision Points that Influence the ICS." Submitted to IBM Center for The Business of Government (Application #: 79052793, \$20,000; Declined).
- 2016 "Development of an Integrated Structural Condition Risk Assessment Matrix (SCRAM) to Enhance On-Scene Decision-Making Related to Firefighter Safety during Structure Fires." Submitted to Federal Emergency Management Agency (FEMA)-Fire Prevention and Safety (FP&S) Grant Program. (Application #: EMW-2015-FP-00802; Finalist, Declined).
- 2015 "A Guide to Emergency Response Planning at State Transportation Agencies" Submitted to the National Academies of Science, Engineering, Medicine Transportation Research Board (NCHRP 20-59(51) B, \$100,000; Declined).

COURSES

Undergraduate

Embry-Riddle Aeronautical University-Worldwide (All Online Courses)

- EXERCISE DESIGN & EVALUATION IN HOMELAND SECURITY (HLSD 410)
August Term 2021
- FUNDAMENTALS OF EMERGENCY MANAGEMENT (EMGY 310)
August Term 2021
- FIRE & EMERGENCY SERVICES ADMINISTRATION (ESVS 402)
March and August Term 2020
- PERSONNEL MANAGEMENT FOR FIRE & EMERGENCY SERVICES (ESVS 405)
March Term 2021
- ADVANCED PRINCIPLES IN FIRE AND EMERGENCY (ESVS 480)
January Term 2020
- FIRE-RELATED HUMAN BEHAVIOR (ESVS 201)
October Term 2019
- ANALYTICAL APPROACHES TO PUBLIC FIRE PROTECTION (ESVS 400)
October Term 2019
- INTRODUCTION TO RESEARCH METHODS (RSCH 202)
Oct Term 2019, January Term 2021, and March Term 2021

Oklahoma State University

- INCIDENT MANAGEMENT & TACTICAL OPERATIONS
Fall 2017*, Spring 2018*, and Spring 2019*
* Online course
- AIM AND SCOPE OF EMERGENCY MANAGEMENT
Fall 2016, Spring 2017*, and Spring 2018
* Online course

Graduate

Embry-Riddle Aeronautical University-Worldwide (All Online Courses)

- Capstone (Thesis Research and Writing; MSES 690)
March Term 2022
- Ethics in the Public Sector of Emergency Services (MSES 560)
January Term 2022

National Cheng Kung University, Taiwan

- DISASTER MANAGEMENT: SOCIAL PERSPECTIVES
Summer 2021*
*Online course (due to the pandemic)

Oklahoma State University

- LEADERSHIP AND MANAGEMENT FOR FIRE AND DISASTER MANAGEMENT ADMINISTRATION

- Fall 2018*
 - * Hybrid Class (Have both online and onsite students)
- READINGS IN POLITICS, PUBLIC POLICY, OR PUBLIC ADMINISTRATION
Spring 2017* and Spring 2018*
 - * Online course
- INTRODUCTION TO FIRE AND EMERGENCY MANAGEMENT
Summer 2016*, Fall 2016**, and Spring 2018**
 - *One-week-long class
 - ** Hybrid Class (Have both online and onsite students)
- DISASTER PREPAREDNESS AND PLANNING
Spring 2016*
 - * Hybrid Class (Have both online and onsite students)
- PROSEMINAR IN FIRE AND EMERGENCY MANAGEMENT
Fall 2015*
 - * Hybrid Class (Have both online and onsite students)

New Courses Developed

Oklahoma State University

- POLITICS OF DISASTER (Graduate Level)
Spring 2018*
 - * Hybrid Class (Have both online and onsite students)
- ADVANCED SPECIAL TOPICS SEMINAR (INCIDENT COMMAND SYSTEM, ICS; Graduate Level)
Fall 2017*, Fall 2018, and Spring 2019*
 - * Hybrid Class (Have both online and onsite students)
- SPECIAL TOPICS SEMINAR IN FIRE AND EMERGENCY MANAGEMENT (FIRE & EMS ADMINISTRATION), Oklahoma State University (Graduate Level), Oklahoma State University
Spring 2017*
 - * Hybrid Class (Have both online and onsite students)
- DIRECTED READING IN FEMP (CONDUCTING QUALITATIVE RESEARCH; Graduate Level)
Spring 2019*
 - *Online Class

Professional Groups

- INTRODUCTION OF EMERGENCY MANAGEMENT
2019 Taipei City Government, Taiwan
- U.S. INCIDENT COMMAND SYSTEM (ICS)
2018 Korean National Fire Service Academy, South Korea
- TRAINING FOR HAZMAT INCIDENT COMMANDERS
2010 National Fire Agency, Taiwan
- FIREFIGHTING STRATEGIES AND TACTICS
2009 New Taipei City Fire Department, Taiwan
- FIRE BEHAVIOUR
2008 National Police Academy, Taiwan

STUDENT ADVISING

- M.A. ADVISOR: Yangkil Jung (Graduated in December, 2019)
- M.A. THESIS COMMITTEE: Jim Aleski, Cheolmin Jeong, David Yonko, and Mark Mcadams
- Ph.D. ADVISOR: Rawan Tawalbeh (Graduated in May, 2021) and Reiter Putnam (Graduates in May, 2022)
- Ph.D. COMMITTEE MEMBER: Trish McIntosh, Marion Blackwell, David Greene, Maria Wegner, Lynn Wojcik, Ryan Devine, and Seongchui (Jason) Choi
- Visiting Scholar: Yunbo Zhang, Dept. of Firefighting Command, Chinese Armed Police Force Academy, China (2017-2018)

PROFESSIONAL DEVELOPMENT

Higher Education

- FACD for Full-Time Faculty (5 weeks training on teaching online courses), 2019 Fall, Embry-Riddle Aeronautical University-Worldwide
- Online Testing Workshop for Arts and Sciences Faculty, 2018 Spring, Oklahoma State University
- Certificate for online instruction, Preparing Online Instructors, 2017 Fall, Oklahoma State University

Disaster Research Related

- 2014 Quick Response Field Research Workshop, Disaster Research Center, University of Delaware

Disaster Management Related

- On-site Training
 - 2021 Emergency Management Higher Education Symposium, Emmitsburg, MD
 - 2020 Emergency Management Higher Education Symposium, Emmitsburg, MD
 - 2019 Emergency Management Higher Education Symposium, Emmitsburg, MD
 - 2018 Emergency Management Higher Education Symposium, Emmitsburg, MD
 - 2017 Emergency Management Higher Education Symposium, Emmitsburg, MD
 - 2017 Administration of Public Assistance for Community Recovery. Emmitsburg, MD
 - 2014 Emergency Management Higher Education Conference. Emmitsburg, MD
 - 2012 Multi-Hazard Emergency Planning for Higher Education. Newark, DE
- Online Independence Study
 - [10] Introduction to the Incident Command System, ICS-100 for Higher Education
 - [9] State Disaster Management (Independence Study)
 - [8] Are You Ready? An In-depth Guide to Citizen Preparedness
 - [7] National Response Framework, An Introduction
 - [6] Exercise Design
 - [5] ICS for Single Resources and Initial Action Incident, ICS-200
 - [4] Emergency Program Manager: An Orientation to the Position
 - [3] Fundamentals of Emergency Management
 - [2] Introduction to Incident Command System: ICS-100
 - [1] An Introduction to Exercises

Fire Service Administration Related Training and Certificate

- Fire Prevention Inspector, New Taipei City Fire Department, Taiwan.
- Qualified Commander for HAZMAT Incidents, National Fire Agency, Taiwan
- Emergency Medical Technician (EMT) – Intermediate Level, Taiwan

SERVICE

Discipline

ASSOCIATE EDITOR, *Journal of Emergency Management Science and Technology*, 2021-present

SUBJECT MATTER EXPERT, A Tabletop Exercise on elevating to the 4th level citywide lockdown in responding to the COVID-19 pandemic, Taipei City Government, Taiwan, May 2021.

INTERNATIONAL SUBJECT MATTER EXPERT, Committee of Fire Command and Safety, National Fire Agency, Taiwan, 2018-2020

PRINCIPAL MEMBER, Technical Committee of the NFPA 1600 (Disaster/Emergency Management and Business Continuity Programs) Code Development, National Fire Protection Association (NFPA), Quincy, MA, U.S.A, 2018-present

INVITED REVIEWER

- Conference submissions & Papers
 - 22nd FEMA Higher Education Symposium, 2020
- Book Proposal & Chapters
 - *Hospital Emergency Management: Principles and Practice (2nd Edition)*, 2018
- Journal Articles
 - *Disasters Journal*, 2018 and 2021

- *Disasters Journal (Special Issue)*, 2018
- *European Journal of Psychotraumatology*, 2018
- *International Journal of Emergency Services*, 2020 and 2021
- *International Journal of Emergency Management*, 2019 and 2020
- *International Journal of Mass Emergencies and Disasters*, 2017 and 2019
- *Journal of Contingencies and Crisis Management*, 2018
- *Journal of Infrastructure Systems*, 2017
- *Natural Hazards*, 2017
- *Natural Hazards Review*, 2019
- *Public Administration Review*, 2022

CO-LEAD, the 2022 FEMA Higher Education Symposium Organizing Team, 2021-2022

LEAD MEMBER & HOST, FEMA Higher Education Symposium Planning Committee

- Lead Member, Poster Submission and Contest (2017-2021)
- Co-Lead Member, Theory and Research Special Interest Group (2017-present)
- Co-Lead Member, International Outreach Special Interest Group (2017-present)
- Host, International Breakfast (2017-present)

MEMBER

- Mary Fran Myers Scholarship Committee, Natural Hazards Center, the University of Colorado at Boulder, 2018-present
- Poster Showcase Working Group, International Association of Emergency Managers (IAEM) Annual Conference, 2018
- FEMA Region VI Emergency Management Higher Education Academic Collaboration Planning Group, 2018-2019
- Researchers Meeting Organizing Committee, Annual Natural Hazards Research and Applications Workshop, 2018-present
 - Co-organizers and moderators, "Invited Session: Combining Practitioners and Academicians: Conversations from Both Sides," 2019 Researchers' Meeting
- Call for paper Submission and Reviewing Processes Committee, FEMA Higher Education Symposium Planning Committee, 2017-2018
- Selection committee, the *International Fire Service Journal of Leadership and Management* (IFSJLM) OSU student presentation prize, 2015-2018

University and College

Embry-Riddle Aeronautical University-Worldwide

- REVIEWER, Worldwide Campus Faculty Seed Grants Application Reviewing committee, 2021 Fall & 2022 Spring
- FACULTY SENATOR, College of Arts and Science (COAS), 2020-present
- RESEARCH ASSOCIATE, College of Arts and Science (COAS), 2020-2021
- REVIEWER, College of Arts and Science (COAS) Faculty Seed Grant Application Reviewing committee, 2020
- MEMBER, College of Arts and Science (COAS) Human Security new faculty search committee, 2019-2020

Oklahoma State University

- MEMBER, Standing Committee of Public Policy and Administration, Fire Council, 2017-2019
- CHAIR, Standing Committee of Public Policy and Administration, Fire Council, 2015-2017
- ADVISOR, Taiwanese Student Association, 2018-2019
- ADVISOR, the International Association of Emergency Managers Student Chapter, 2016-2019
- INVITED LECTURER
 - Osher Lifelong Learning Institute (Great Decisions: Conflict in the South China Sea), Tulsa, OK, March 2017
 - Osher Lifelong Learning Institute (Great Decisions: Conflict in the South China Sea), Stillwater, OK, June 2017

Department

Embry-Riddle Aeronautical University-Worldwide

- Program Chair, Master of Science in Emergency Service (MSES), 2020-present

- Completed and passed the SACSCOC 5-year program review (Bachelor of Science in Emergency Services, BSES), 2020
- Promote & recruit students to the Emergency Services degrees, 2019-present
- Assisted SES Chair Search Committee in recruiting job applicants, 2019-2020
- Assist the interim department chair as a subject-matter expert in ES, including advising students, reviewing adjunct faculty credentials, reviewing courses for transfer credit, 2019-present
- Review current ES courses as a way of both providing input as a subject matter expert and being familiarized with the degree programs, 2019-present
- Mentored junior faculty in terms of professional development, 2019-2020
- Be an academic reviewer for courses developed for the B.S. and M.S. in Emergency Services degrees, 2019-present

Oklahoma State University

- COMMITTEE CHAIR
 - Doctoral Comprehensive Exam Committee, 2018 and 2019
- COMMITTEE MEMBER
 - Retention Committee, 2018
 - Graduate Committee, 2017-2018
 - International Outreach, 2015-2018
 - Committee for Developing Doctoral Qualified Exams and Reading List, 2016-2017
 - Recruiting Committee for New Faculties in Emergency Management Field, 2015
- CONTRIBUTOR, Division of Engineering Technology Newsletter, 2018
 - "Faculty Spotlight in 2018," September, 2018
- CONTRIBUTOR, Department of Political Science Newsletter, 2017 and 2018
 - "Participating in 65th IAEM Annual Conference," April, 2018
 - "Four FEMP professors presented in the 17th MPSA Annual Conference," April, 2017
- ON-SITE COORDINATOR, 65th IAEM Annual Conference Booth Operation, 2017

OTHER

Media Interviews

- Chang, R. (2022, January 18). Lessons learned from the deadly Bronx apartment fire Podcast Interview, Jan 2022. <https://anchor.fm/worldjournal/episodes/ep-e1d4juj>
- Chang, R. (2022, January). The importance of organizing disaster exercises in private sectors: an interview with Dr. Ray Chang, an expert in emergency management. *The 1611 Financial Magazine*, 1, pp. 68-71.
- Chang, R. (2021, October 18). Fire Safety in the Spotlight. *Taiwan Plus*. <https://www.taiwanplus.com/news/society/80000887>
- Chang, R. (2021, June) From Fire to Emergency Management: Dr. Ray Hsienho Chang <https://youtu.be/EHAXfaS3-Gw>
- Chang, R. (2021, June) U.S. emergency management system <https://youtu.be/7fnGV7JaUk4>
- Chang, R. (2021, June) Please do not call firefighters a hero ft. Dr. Ray Hsienho Chang <https://open.firststory.me/story/ckpqbi047h7po0841yajxlhbk>
- Chang, R. (2016, July) Strategies to respond to and prepare for the next disasters <https://youtu.be/HoKrQ7Og2fU>

COLUMNIST, *United Daily News* (one of the major newspapers in Taiwan), 2014-present (Total: 45 articles)

- 2021
 1. Chang, R. (2021). How to Prevent the Deadly Kaohsiung Blaze: U.S. Experience on Managing Vacant Buildings. *United Daily News* <https://opinion.udn.com/opinion/story/6663/5818425>
 2. Chang, R. (2021). How does Taiwan Systematically Respond to Disasters—Comments on the Tragical "Taroko" Train Derailment. *United Daily News* <https://opinion.udn.com/opinion/story/6663/5363299>

- 2020
 1. Chang, R. (2020). Suggestions on Improving Emergency Management for the Next 20 Years in Taiwan. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/4879674>
 2. Chang, R. (2020). Coronavirus Crisis as an Example for How Business Plan for Emergencies. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/4350939>
- 2019
 1. Chang, R. (2019). Comments on the Recent Revisions of Taiwanese National Fire Service Act. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/4134066>
 2. Chang, R. (2019). Devastating Fire in “Notre Dame de Paris:” Strategies and Tactics on Fighting Fires in Historic Buildings. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/3760442>
 3. Chang, R. (2019). Planning and Organizing the Drills without Plots. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/3717130>
 4. Chang, R. (2019). Incorporating Human Factors to Design Emergency Egress in the Taipei Superdorm Stadium. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/3585791>
- 2018
 1. Chang, R. (2018). Planning for Large Political Events. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/3493122>
 2. Chang, R. (2018). Strategies on Planning for Disasters: 3 Years After the Mass Casualty Incident in the Formosa Theme Park. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/3211378>
 3. Chang, R. (2018). Establishing a Professional Emergency Management Agency is Important for Taiwan. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/2975493>
 4. Chang, R. (2018). Roles and Functions of the Emergency Operations Center. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/3058150>
 5. Chang, R. (2018). Why Pursue Higher Education? *United Daily News*
<https://opinion.udn.com/opinion/story/6663/2964474>
- 2017
 1. Chang, R. (2017). Safety is the First Priority: Rationales and Priorities of Disaster Response. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/2804816>
 2. Chang, R. (2017). Strategies on Disaster Response: How to Decrease the Number of Injuries and Fatalities on the Ground. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/2804816>
- 2016
 1. Chang, R. (2016). Disaster Preparedness Education and Training. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/2114247>
 2. Chang, R. (2016). The “Trolley Problem” of Disaster Response: Choosing Between the Lives of Responders vs. Citizens. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/2052848>
 3. Chang, R. (2016). Preparing for Typhoons: What You Can Do. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/1969493>
 4. Chang, R. (2016). Incorporating Human Behavioral Considerations into Your Disaster Plan. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/1947554>
 5. Chang, R. (2016). Strategies to Manage the Media at the Disaster Scene. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/1835800>
 6. Chang, R. (2016). “Management by Objectives” – A Strategy to Manage Disaster Response Activities. *United Daily News*
<https://opinion.udn.com/opinion/story/6663/1827928>

7. Chang, R. (2016). Strategies on Responding to Terrorism and Natural Disasters. *United Daily News* <https://opinion.udn.com/opinion/story/6663/1588015>
 8. Chang, R. (2016). Government Preparedness for Terrorism. *United Daily News* <https://opinion.udn.com/opinion/story/6663/1338869>
- 2015
 1. Chang, R. (2015). The Purpose and Components of Disaster Drills and Exercises. *United Daily News* <https://opinion.udn.com/opinion/story/6663/1311955>
 2. Chang, R. (2015). Upholding Justice vs. Completing Objectives: Which One is More Important? *United Daily News* <https://opinion.udn.com/opinion/story/6663/1209606>
 3. Chang, R. (2015). For Safety Purposes, Should We Ban Our Citizens from Climbing Mountains or Swimming in Oceans? *United Daily News* <https://opinion.udn.com/opinion/story/6663/1180375>
 4. Chang, R. (2015). It is Time to Establish a Cabinet-Level Disaster Management Agency. *United Daily News* <https://opinion.udn.com/opinion/story/6663/1083487>
 5. Chang, R. (2015). How to Prevent the Next "Flash Fire?" *United Daily News* <https://opinion.udn.com/opinion/story/6663/1022841>
 6. Chang, R. (2015). Strategies to Secure the Taipei Superdorm Stadium. *United Daily News* <https://opinion.udn.com/opinion/story/6663/846554>
 7. Chang, R. (2015). Proactive vs. Reactive Disaster Response. *United Daily News* <https://opinion.udn.com/opinion/story/6663/833539>
 8. Chang, R. (2015). Strategies on Establishing a Mobile Incident Command Post. *United Daily News* <https://opinion.udn.com/opinion/story/6663/785274>
 9. Chang, R. (2015). Establishing a Disaster Response System in Taiwan. *United Daily News* <https://opinion.udn.com/opinion/story/6663/721002>
 10. Chang, R. (2015). Strategies on Managing Fire Services in Taiwan. *United Daily News* <https://opinion.udn.com/opinion/story/6663/666562>
 11. Chang, R. (2015). Challenges to Applying American Disaster Response Systems to Taiwan. *United Daily News* <https://opinion.udn.com/opinion/story/6663/639297>
 - 2014
 1. Chang, R. (2014). Honesty is the Best Policy, Even after a Disaster. *United Daily News* <https://opinion.udn.com/opinion/story/6663/599710>
 2. Chang, R. (2014). Three Criteria to Selecting a Good Emergency Manager. *United Daily News* <https://opinion.udn.com/opinion/story/6663/553477>
 3. Chang, R. (2014). There is No Single Correct Answer to Disaster Response. *United Daily News* <https://opinion.udn.com/opinion/story/6663/511094>
 4. Chang, R. (2014). "What if Zombies Were to Attack Taipei City?" This is Not a Silly Preparedness Question. *United Daily News* <https://opinion.udn.com/opinion/story/6663/433063>
 5. Chang, R. (2014). Reconsidering a Human-Centered Disaster Management System. *United Daily News* <https://opinion.udn.com/opinion/story/6663/421349>
 6. Chang, R. (2014). Natural Disasters Cannot Always Be Prevented. *United Daily News* <https://opinion.udn.com/opinion/story/6663/386190>
 7. Chang, R. (2014). Why Do We Need a Cabinet-Level Disaster Management Agency? *United Daily News* <https://opinion.udn.com/opinion/story/6663/315101>
 8. Chang, R. (2014). Why are These Firefighters Protesting Now: The Problems and Challenges of the Current Fire Service Administration. *United Daily News* <https://opinion.udn.com/opinion/story/6663/286905>
 9. Chang, R. (2014). Different Types of Disaster Drills and Exercises. *United Daily News* <https://opinion.udn.com/opinion/story/6663/285019>
 10. Chang, R. (2014). Disaster Responders Are Humans, Too: We Need to Consider Their Safety and Health. *United Daily News* <https://opinion.udn.com/opinion/story/6663/285018>
 11. Chang, R. (2014). The Success of Disaster Response Relies on a Team and Not a Hero. *United Daily News* <https://opinion.udn.com/opinion/story/6663/285017>