

**State of Michigan (MI)**  
**Department of Licensing and Regulatory Affairs (LARA)**  
**Bureau of Professional Licensing, Investigations & Inspections Division (IID)**  
**File No. 335464, Case Name: Shawn P. McElmurry (Licensee)**  
**Review Commentary by C. Hookham, MI Board of Professional Engineers**

The following review comments were prepared in response to questions raised in IID's Investigation Report, dated /approved on June 20, 2018 relative to a Statement of Complaint filed on March 30, 2018 (File No. 335464; Reference A). This review was conducted with reference to published IID interviews and attachments provided with the Investigation Report. Limited external research was also conducted based on publically available data and reference was also made to the Michigan Occupational Code (Act 299 of 1980, amended) and Administrative Code related to professional engineering practice to which the Case complaint centered around (References B, C, and D), and other sources cited herein. Lastly, consideration was given to LARA interview responses given by Dr. Susan Masten (Reference E) and National Institutes of Health (NIH: Reference F).

**1. Did the Licensee falsify or misrepresent his professional qualifications if he incorrectly stated that his experience included working in Flint for 5 years?**

My answer to this required review of information provided by LARA and public literature search, with the following summary provided.

In an e-mail dated October 12, 2015 from McElmurry to Dr. Marc Edwards, a summary of his NIH Rapid Response proposal was offered with a note that such would be changing. This e-mail appeared to be written as part of McElmurry's efforts to solicit Edwards to join his planned research team but ultimately this did not happen. Statements therein read "our team (part of the NSF funded Water @ Wayne Group) is currently working together and able to respond with this rapid assessment based on our intimate understanding of the Flint regional water system and social infrastructure. Over the last 5 years the PI (McElmurry) has conducted research focused on how to best adapt Flint's existing water infrastructure to changes in population and industrial demand. As a result of this work, the team already possesses a complete hydraulic model of Flint's drinking water system." Dr. McElmurry was unsuccessful in attracting Dr. Edwards to participate in the grant program.

I could not find this same quoted e-mail language in the ensuing NIH SF 424 submission although there is suggestion that such "intimate knowledge" was gained "through previous PI (McElmurry) work in Flint ("Water and Wastewater Infrastructure Management in Shrinking Cities", by Faust et al., 2015), the project team has unique access to the Flint water distribution system details...". I accessed this referenced paper, published in "Public Works Management & Policy" in September, 2015, and found such reviewed four different cities including Flint but that content had little to do with Flint water system details, configuration, or water quality and instead focused on general infrastructure problems and challenges in cities with declining populations.

The biographical sketch of Dr. Shawn McElmurry included in this revised NIH SF 424 Submission dated November 2, 2015 contains very little detail of McElmurry's professional experience prior to and from 2010 (year he was awarded a PhD) through 2015. In particular, there is no mention of any prior experience associated with the City of Flint water system in either experience summaries or in published works (as lead or contributor). No significant research works or other professional qualifications were offered in McElmurry's response to the Complaint dated April 30, 2018 wherein he should have identified any prior experience gained in addressing the City of Flint drinking water system. In fact, there was little information presented defending his ability to lead and conduct the NIH/National Institute of Environmental Health Sciences (NIEHS) grant research and Flint Area

Community Health and Environment Partnership research specific to the City of Flint (FACHEP; as commissioned by a grant from the State of Michigan, Department of Health and Human Services (DHHS)). It is not believed that Dr. McElmurry was ever contracted by the City of Flint for any service nor did he have any stated, direct experience with the City's drinking water system.

I did access a website containing dialog posted by Dr. Marc Edwards (Reference G) concerning McElmurry's credentials, wherein there is dialog apparently extracted out of State of Michigan court proceedings where a third party questioned McElmurry on his Flint experience. ***It is uncertain whether this dialog is factual; certainly there is conflict between Edwards and McElmurry at this time.*** However, it does identify a trend wherein McElmurry was unable to define any specific projects, research, consulting, precise timeline, or correspondence defending any prior Flint experience.

The Investigation Report produced by Stephanie Murphy (State of Michigan, LARA) dated June 20, 2018 contains a witness statement from Dr. Kasey Faust, for whom Dr. McElmurry provided external review of her Ph.D thesis from 2013 to 2015. Faust identifies that McElmurry gained access to a significant amount of City of Flint data and a hydraulic model which she developed in her thesis preparation. While McElmurry may have commented on thesis works as a reviewer, he was certainly not a part of a "research team" preparing such. Rather than indicating this relationship and source of Flint knowledge base, the NIH grant proposal incorrectly references loosely related "external works". Faust also states that she did not provide permission to McElmurry to use this research/dissertation nor was she included in any defined team to contribute this knowledge/research/expertise where such could have benefitted society and public safety.

A letter from Dr. Nancy Love (University of Michigan, College of Engineering) to Ms. Stephanie Murphy Michigan, Bureau of Professional Licensing) dated June 1, 2018 in Reference A alternately offered strong support for Dr. McElmurry's character and high ethical/professional standards. Drs. Love and McElmurry served together in research conducted under the FACHEP beginning in late 2015 with no prior collaboration found in my literature search.

However, notes from interviews with Dr. Susan Masten of Michigan State University conducted by Mr. Jon Campbell (State of Michigan, LARA; Reference E) on July 26 and August 6, 2018 regarding Dr. McElmurry's conduct on the FACHEP research work concluded that repeated incidents of "ghost" authorship (where authors who contributed substantially to McElmurry's work were omitted), misappropriation of intellectual property (plagiarism), denial of earned authorship, and falsification of his actual experience record all occurred. A second complaint to LARA regarding these concerns and providing evidence to such is expected to be filed by Dr. Masten.

McElmurry's provided listing of his publications and prior research in the NIH grant proposal contains a diverse list of topics beyond drinking water research, including energy and stormwater topics. There are no citations associated with the City of Flint, or other similar research.

In summary, I believe that in at least two instances (e-mail to Edwards and NIH grant proposal cited above) Dr. McElmurry overstated his prior involvement in City of Flint's drinking water system and contamination issues. These overstatements were intended to both solicit/attract external contributions by other experts (e.g., Edwards) to his research team and to substantiate large research awards/funds for Wayne State University and other contributors. In an additional two instances, two respected members involved in drinking water research (Faust and Masten) and McElmurry's work have both cited improprieties of similar nature. Apparently under oath and in response to the LARA Complaint, McElmurry has been unable to substantiate prior City of Flint experience. ***As a result,***

*these overstatements regarding City of Flint experience are deemed to be “misrepresentations” in a professional setting based on my review work.*

**2. Did the Licensee seek professional employment based on his qualifications, competence, and ability to properly accomplish the employment sought when applying for the NIH and FACHEP proposals/grants?**

Dr. McElmurry was professionally employed by Wayne State University (WSU) at the time that the complaint was filed. Consideration was given as to whether “seeking professional employment” applies to a situation where a professionally employed person uses such stature and credentials to secure research funding. Brief review of external literature sources did not identify any cases where external research activities constitute “professional employment”. In fact, McElmurry’s employment by WSU likely was based completion of both academic service (teaching) and completion of research work. There was no suggestion that he was seeking alternate employment from WSU through pursuit of NIH/FACHEP research awards and subsequent work involved WSU and other university staff and students. It is common for university researchers to pursue research funding from multiple and various sources, as part of substantiating their own career path, providing benefits to the general public, and yielding credentials to the university’s related educational programs. This process can lead to “embellishment” or misrepresentation of credentials given that many research awards heavily weight technical expertise, demonstrated track record of participants, credentials of the principal investigator (PI), and commitment to achieve desired results.

In both NIH and FACHEP proposals and research efforts, multi-disciplined teams of Wayne State and external experts were assembled with McElmurry as PI. Certainly universities attempt to internalize much of the research funding but in complicated research such as that posed by the City of Flint water crisis and human impacts from lead and Legionnaires bacteria exposure require external expertise. For research conducted with public consequences, it is common to have results peer-reviewed. External peer review of the FACHEP reporting by KWR Watercycle Research Institute (“Assessment of the study on Enhanced Disease Surveillance and Environmental Monitoring in Flint, MI” dated October, 2017) identified a number of concerns with FACHEP project management and outcomes and apparently the sponsor of the FACHEP research (State of Michigan Department of Health and Human Services, as directed by the State) cancelled further research with the FACHEP team. However, McElmurry was purely the PI for this research effort and this was not considered to be “professional employment”. No concerns relative to performance or research conclusions were voiced by the NIH. *It was concluded that the licensee did not seek “professional employment” in his course of work.* See the response to Question #5 also.

**3. Was the Licensee competent to lead the FACHEP research project?**

The Merriam-Webster Dictionary (<https://www.merriam-webster.com/dictionary/competent>) defines “competent” to be: “having requisite or adequate ability or qualities” and being “legally qualified or adequate”.

Competency to lead a multi-million dollar research project involving multiple professional researchers and a complicated, public health issue with schedule-driven pressure requires skills gained through other large research investigations. The Investigation Report contains several third-party experts in the water contamination field of study, many of whom participated in research with Dr. McElmurry. This is countered by statements in the Complaint questioning competency and noting concerns expressed by Dr Faust about possible mis-use of her research/dissertation materials.

There is insufficient evidence to conclude on whether the Licensee was competent to lead the FACHEP research project. Given that the research had further connotations related to the decisions made, actions/inactions taken, and job performance of state, county, and city government employees,

as well as responses/non-responses to critical FOIA requests and third-party (KWR) concerns, some controversy on research results was inevitable. The criticisms cited in the KWR report do point to poor project leadership, organization, communication but further analysis of the KWR report and analysis of the State of Michigan's criticism of the FACHEP research is needed before competency or lack thereof can be established. I have personally served as principal investigator (PI) on large research projects and metrics/criteria used to establish whether the PI leadership was successful included: budget and schedule adherence, research alignment with mission statement/goals, quality and validity of the results and interpretation thereof, and satisfaction of third-party peer review/audit. Many of these metrics/criteria could not be located in the documentation furnished via the Investigative Report or through brief records recovery. That client (MDHHS/State) satisfaction was not achieved after consultant (FACHEP) spending over \$3.3 million of state funds without credible PI defense and that other FACHEP participants cite very negative performance by McElmurry is definitely concerning as to whether competency existed. ***In conclusion, there is insufficient evidence to conclude that Dr. McElmurry was incompetent to lead the FACHEP research project.***

**4. Was the dissertation work of Dr. Kasey Faust used by the Licensee to secure funding for the NIH and/or FACHEP projects?**

The Investigation Report did not contain the FACHEP proposal, but only an undated "FACHEP" planning document apparently written to defined the planned work on a State of Michigan funding opportunity by Wayne State University (three), Kettering University (one), and Henry Ford Health System (one) key researchers. Other participants later cited in the Phase 1 Report included University of Michigan and Colorado State University representatives. There is no mention of Dr. Faust or her research in the FACHEP correspondence provided. However, the e-mail traffic recovered from FOIA probes clearly includes her dialog with Dr. McElmurry leading up to the FACHEP work. This work was predominantly focused on Legionnaires disease associated with Flint water supplies, whereas the NIH research was more broad-based and focused on multiple contaminants (e.g., lead, Legionnaires bacteria, other) and chloride levels in water as well as infrastructure and policy impacts on challenged cities. At face value, Dr. Faust's data and research were judged by me to be more valuable to the NIH research work.

My detailed observations related to Dr. Faust's research and the NIH grant proposal were identified in my response to Question #1 above. Based on information available in the Investigative Report, there was intent to demonstrate prior experience with City of Flint water system and infrastructure in the NIH proposal which none of the proposed participants including Dr. McElmurry actually possessed. A loose correlation to previous research and publication led by Faust that McElmurry participated in was used to show relevant experience and enhance the likelihood of securing the grant funding. This misrepresentation was also included in the proposed Rapid Response draft issued by McElmurry to Dr. Edwards. I was not able to locate the research reporting which was funded by the NIH grant, so it is difficult to know whether this misrepresentation cascaded into actual modelling and water contamination transport study of the Flint system because said experience wasn't possessed by McElmurry. ***My conclusion is that Faust's dissertation and body of knowledge were used by McElmurry to assist in securing research funding without proper reference/credit and that Dr. Faust was not a part of ensuing research work.***

**5. Did the Licensee violate any standards of practice and/or professional conduct as it relates to the Professional Engineering Occupation?**

References B through D were reviewed, alongside information provided with the Investigation Report and that collected through literature search, to assess whether any standards of practice or conduct were violated.

Prohibited conduct of a professional engineer is addressed in Sections 339.601, 606 and 1204 (Articles 6 and 20) of the Occupational Code. The Merriam-Webster Dictionary (<https://www.merriam-webster.com/dictionary/dishonesty>) defines “dishonesty” to be “lack of honesty or integrity: disposition to defraud or deceive”. Review of the content of these sections found that none of these conditions cited therein (e.g., fraud, deceit, or dishonesty in practicing professional engineering) were truly the subject of this Complaint nor did the Investigation Report contain evidence of misconduct per the Occupational Code. However, McElmurry’s overstated involvement in the City of Flint water system definitely bordered on being dishonest.

Standards of practice and professional conduct for professional engineers are contained in Sections R339.16031 to R339.16034 of the Administrative Code, and address solicitation of employment, conflicts of interest, competency required in engineering project participation, and work review/supervision. Each of these standards was reviewed relative to the Complaint filed. Several observations were made:

1. As noted in my response to other Questions, I could not identify any evidence of qualifications or experience of Dr. McElmurry with respect to City of Flint’s water infrastructure and treatment prior to the NIH grant proposal and his related solicitation of possible research teammates (Edwards). Reference F did not shed any further evidence in to this Complaint’s focus. There was definitely misrepresentation of his credentials observed relative to R339.16031 although such was not initially viewed by me to be pure “falsification” but rather an embellishment of his own actual knowledge base/experience. The actual wording in the Complaint is that Dr. McElmurry “appropriated ideas that were not his for an NIH research proposal”. Based on the Investigation Report packet, it is difficult to know whether this misrepresentation extended into “appropriation of ideas”. Dr. Masten’s response to questions associated with McElmurry’s conduct on separate FACHEP work clearly point to appropriation of ideas and poor conduct by McElmurry; LARA should carefully look at any supporting evidence offered by Dr. Masten to validate this in her complaint.
2. Dr. McElmurry did align himself with other experts and professional associates in areas in which he was not technically competent for the NIH grant proposal and FACHEP team, thus demonstrating compliance with the third standard of practice (R339.16033) of professional engineers. This standard does not address competency of principal investigators or project managers (individuals who assemble teams) for which part of the Complaint is focused on.
3. It is unclear how important the misrepresentation of credentials/qualifications/experience cited in Item 1 above was to the actual awards of research funding from NIH and MDHHS. Several documents of interest (“Additional Data Needs”) are cited below, which could better shed some understanding of this point. However, these documents are likely range from difficult to impossible to retrieve at this juncture.
4. Regarding the Complaint’s accusation that Dr. McElmurry’s “lack of competence and expertise, this project (“FACHEP”) has led to a high profile prosecution of State of MI employees...”, I was unable to link how FACHEP research performed directly led to said prosecution. Certainly some of the correspondence attached to the Investigation Report identified the challenges that FACHEP team had with recovery of data including that from interviews with State of Michigan employees, but such does not directly align with what little I have read on ensuing testimony by McElmurry and findings of the State court system. The State did employ a third party (KWR) to review the outcomes of the FACHEP work and, assuming such was truly an independent and educated viewpoint, KWR’s report does state: “basic conditions for project oversight are lacking, scientific output and quality of work does not match the time and budget spent, lack of trust between client and customer are barriers to responsible research”. These conclusions suggest that there was some mismanagement of the research, which clearly points to the PI’s expertise in leading such

efforts. However, it is difficult to state that such was due to a “lack of competence” which is at the heart of the matter and intent of the Complaint to identify.

5. The ongoing State of Michigan prosecution of State employees involved in the “Flint Water Crisis” is a separate criminal proceeding, for which McElmurry is not under investigation.

In summary, the only element of the Complaint that was found to be present in the Investigation Report documentation was Dr. McElmurry’s misrepresentation of his prior City of Flint experience to Dr. Edwards and the NIH (and potentially into the MDHHS grant proposal, which has not been provided). As professional engineers, it is critical that we represent ourselves truthfully to any member of the public at all times and particularly when such has consequences such as gaining a publically funded research award. The severity of this misrepresentation was not initially viewed to be falsification but rather embellishment. *Insights raised by Dr. Masten and the pattern of professional misconduct suggest that this embellishment of experience truly was misrepresentation and a violation of the Occupational Code, Section 339.604 Items (c) and (d) on occupational conduct and moral character. The subsequent complaint filed by Dr. Masten on related concerns is viewed to be highly relevant and it is suggested that the two separate complaints be merged together into a common response by the State of Michigan. However, and most important to this review, said misrepresentation was NOT found to be a violation of the current standards of practice and professional conduct for professional engineers as contained in Sections R339.16031 to R339.16034 of the Administrative Code.*

#### **REFERENCES (CURRENT REVISIONS AND AMENDMENTS AS OF 07/04/18)**

- A. Michigan Department of Licensing and Regulatory Affairs (LARA), Statement of Complaint Against Dr. Shawn McElmurry, Case No. 335464, March 1, 2018.
- B. Michigan Legislature, Public Act 299 of 1980, “Occupational Code”, as amended.
- C. Michigan Legislature, Public Act 299 of 1980, Section 20, Professional Engineering Practice
- D. Michigan Administrative Code, Sections R339.16001 to R339.16044, Department of Licensing and Regulatory Affairs.
- E. State of Michigan, LARA, Notes From Interviews with Drs. Mona Hanna-Attisha and Susan Masten Regarding Complaint 335464 (McElmurry), Michigan State University, August 8, 2018.
- F. Letter from NIH (Ms. Robin Schofield) to State of Michigan LARA (Ms. Stephanie Murphy) on FOI Case 48224, Criteria Used to Assess Wayne State University NIH SF 424 Grant Application, August 14, 2018 and E-Mail Message From Ms. Gwen Collman (NIH/NIEHS) to Stephany Murphy dated August 17, 2018.
- G. “Considering the Unimaginable: Did McElmurry Completely fabricate his story of work “IN FLINT” from 2010-2014?”, Siddartha Roy, March 31, 2018, <http://flintwaterstudy.org/2018/03/considering-the-unimaginable-did-mcelmurry-completely-fabricate-his-story-of-work-in-flint-from-2010-2014/>

#### **ADDITIONAL DATA NEEDS (IF AVAILABLE)**

The following documents, if recovered, might provide additional insight into the extent of Dr. McElmurry’s misrepresentation.

1. Grant Application from FACHEP to State of Michigan Department of Health and Human Services (MDHHS), as well as any communications associated with FACHEP qualifications to complete such research.
2. National Institutes of Health, Final Bid Evaluation and Basis for Grant Award to Wayne State University, NIH SF 424 Grant Application.