



CENTRAL MICHIGAN  
UNIVERSITY

28 April 2008

Aliza I. Sacknovitz, Ph.D.  
Investigative Scientist  
National Science Foundation  
4201 Wilson Boulevard  
Arlington, VA 22230

Dear Dr. Sacknovitz:

This letter serves as notification of release of the final report from the committee investigating an allegation that has been levied against Dr. Azita Manouchehri regarding research activities for the NSF Award #0455797 "Concept: Connecting Content and Pedagogical Education of Pre-service Teachers". The final report is attached and has also been submitted to Provost/Executive Vice President of Central Michigan University, Dr. Julia Wallace.

Enclosed you will find the following documents:

1. The report from the investigative committee. This report contains the following documents:
  - a. Report of findings, 14 pages in length
  - b. Research Integrity Policy, for the Office of Research and Sponsored Programs at Central Michigan University
  - c. Inquiry Report, Report on an Inquiry into an Allegation of Research Misconduct
  - d. Collected materials from students in MTH 362
  - e. Assurance statements
  - f. Email and memo support documents
  - g. July 2007 version of the developed materials
  - h. April 2007 version of the developed materials
  - i. Timeline: Version A-chronological; Version B-by individual
2. Report of the consensus committee
3. The response to the report from the investigative committee (#1 above), from Dr. Azita Manouchehri
4. The response, from the investigative committee, to the response from Dr. Azita Manouchehri (#2 above)

All of the policies and procedures from the Research Integrity Policy for the Office of Research and Sponsored Programs at Central Michigan University have been upheld. A summary of the administrative milestones is as follows:

26 July 2007: Allegation of Research Misconduct, Consideration of Inquiry: Received via Email from Dr. Lisa DeMeyer to Dr. Wayne Osborn

28 August 2007: Completion of Inquiry and Report on the Inquiry: Letter Transmitted to Dr. Azita Manouchehri from Dr. Wayne Osborn: Letter from Dr. Wayne Osborn to Dr. Gary Shapiro

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24 September 2007: Notification of Decision to Advance from Inquiry to Investigation: Email Correspondence from Dr. Gary Shapiro to Dr. Azita Manouchehri

26 September 2007: Notification of Decision to Advance from Inquiry to Investigation: Letter from Dr. Gary Shapiro to the National Science Foundation

10 October 2007: Notification of Investigative Stage: Membership of Investigative Committee: Letter to Dr. Azita Manouchehri to Dr. Gary Shapiro

10 December 2007: Report from the Consensus Committee: Written Document

14 December 2007: Central Michigan University Extension Approved: Email Notification from Dr. Janine Janosky to Dr. Azita Manouchehri

25 March 2008: Report from Investigative Committee Forwarded to Dr. Azita Manouchehri, Letter from Dr. Janine Janosky to Dr. Azita Manouchehri

31 March 2008: Request from Dr. Azita Manouchehri to Dr. Janine Janosky to Extend Deadlines of Central Michigan University and the National Science Foundation: Request Received via Attorney James Feeny to Attorney Eileen Jennings.

31 March 2008: Central Michigan University and National Science Foundation Extensions Approved: Email Notification from Dr. Janine Janosky to Attorney Eileen Jennings, and Communication from Attorney Eileen Jennings to Attorney James Feeny

11 April 2008: Response from Dr. Azita Manouchehri to the Report from the Investigative Committee

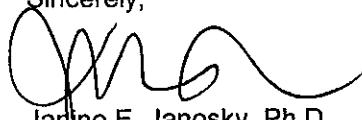
15 April 2008 Response from Dr. Azita Manouchehri to the Report from the Investigative Committee

21 April 2008 Response from the Investigative Committee, to the Response from Dr. Azita Manouchehri (#3 above)

The response from Dr. Azita Manouchehri to the Investigative Committee, dated as 11 April 2008, addresses concerns regarding a letter that was sent from Dr. Gary Shapiro to Dr. Joseph Alutto at The Ohio State University. This letter is not relevant to this investigation, as it addresses allegations outside of the scope of this investigation.

If I may provide any additional information or explanation, I would appreciate the opportunity to do so.

Sincerely,



Janine E. Janosky, Ph.D.  
Vice Provost for Research

CC: Dr. Julia Wallace

## **Confidential**

### **Section 0: Preamble/Introduction**

An allegation of research misconduct was levied against Dr. Azita Manouchehri for work completed during engagement with a National Science Foundation (NSF) grant project titled, "CONCEPT: Connecting Concept and Pedagogical Education of Pre-Service Teachers." Specifically, the allegation was that Manouchehri engaged in research misconduct by "improper assignment of authorship, claiming another person's research as her own, and/or failure to abide by IRB-approved protocols for this project" (Inquiry Report, 2007-Appendix A).

The inquiry process began when issues were raised during the process of Dr. Manouchehri's request to Central Michigan University (CMU) to maintain her involvement in the CONCEPT grant when she took a new position at The Ohio State University. According to the report of the inquiry phase, on July 11, 2007, Dean Robert Kohrman and Dr. Doug Lapp, Principal Investigator on the CONCEPT grant, met with Dr. Wayne Osborn, Interim Vice Provost of the Office of Research and Sponsored Programs (ORSP). It was during the course of this meeting that concerns were raised regarding materials Manouchehri developed as part of the CONCEPT Project. Ultimately, Dr. Osborn elected to make the allegation which initiated the inquiry process as outlined in the Central Michigan University (CMU) Research Integrity Policy (See Appendix B). A final report of the inquiry was completed on August 28, 2007 and sent to Provost Gary Shapiro and Dr. Manouchehri. The conclusion of this report was that there was enough evidence to warrant a full investigation. CMU's Research Integrity Policy was followed to form an investigation committee. The committee was comprised of Dr. Kirsty Fleming, Interim Executive Director of the Kentucky Center for Mathematics at Northern Kentucky University, Dr. Justin Oh-Lee, Associate Professor of psychology at CMU, and Dr. Pamela Eddy, Associate Professor of educational leadership at CMU. Dr. Fleming served as the chair of the investigative committee. Interviews, meetings, and document analysis occurred from October 2007 to January 2008. Following is a

summary of the investigation process and the conclusion of the Research Integrity committee.

The report is organized to cover each of the allegations raised in the inquiry stage of the research misconduct process. The allegations are outlined and support documentation supplied. Finally, the committee determination is given.

## **Allegation 1**

**Allegation 1: At issue was if Dr. Azita Manouchehri engaged in research misconduct by improper assignment of authorship, claiming another person's work as her own.**

### **Section 1: Did the alleged act occur?**

The Central Michigan University *Research Integrity Policy* (see Appendix B) states that, among others things, research misconduct may manifest as:

Improper assignment of authorship, such as excluding other contributors or claiming the work of another person as one's own, presenting substantially the same materials as an original article in more than one publication, including individuals as authors who have not made a definite contribution to the work published, and submitting multi-authored publications without the concurrence of all authors.

Claiming another person's research as one's own, including plagiarism, appropriation of ideas as expressed in grant proposals or articles received for peer review, or in student papers, and violation of intellectual property laws.

The National Science Foundation defines plagiarism as:

Using someone else's **ideas** without giving appropriate credit

Using someone else's **words** without giving appropriate credit

Using someone else's **processes** without giving appropriate credit

Using someone else's **results** without giving appropriate credit

The committee was provided with three distinct sets of materials alleged to be related to MTH 362, Problem Based Geometry, as part of the CONCEPT project. Dr. Manouchehri and Dr. DeMeyer were the team who were to work on MTH 362, however, Dr. Manouchehri and Dr. DeMeyer agreed that the materials produced for MTH 362 were prepared solely by Dr. Manouchehri.

a) The first set of materials were those provided by Dr. Lapp and Dr. DeMeyer and were the ones that prompted, in late March 2007, concerns that plagiarism had occurred. The concerns that were addressed at this time did not lead to any formal allegations. During the course of the investigation, the committee discovered that these materials did not consist of a single set of coherent documents that were used in MATH 362 but rather contained some materials that were used in MTH 362, some materials that were considered for but not included in the course packet, and materials that did not originate from Dr. Manouchehri.

b) The second set of materials was the course packet used in MATH 362 in spring 2007 (see Appendix C). These were provided by Dr. Lapp as being the materials that were collected from the students taking MTH 362 in spring 2007. To verify that these were in fact the materials used with the students the committee:

- i) Asked that Dr. Lapp provide an assurance statement attesting to the fact that this was the course packet used in MATH 362 and collected from the students (see Appendix D);
- ii) Asked that Dr. DeMeyer provide an assurance statement attesting to the fact that this was the course packet used in MATH 362 and collected from the students (see Appendix D);
- iii) Noted that some of the materials submitted by Dr. Lapp as being those retrieved from the students had, on the front cover, hand written names. The

committee obtained a copy of the class list and verified that the names on the materials matched the names of students who had taken the class.

iv) Asked Dr. Manouchehri to provide a copy of the course materials. Dr. Manouchehri stated in an e-mail message dated December 11, 2007 (see Appendix E-1) that she did not have a copy of the materials and requested that we send her a copy.

v) Dr. Angelos (the then Chair of the Department of Mathematics), and Dr. Kohrman (the then Dean of the College of Arts and Sciences) were also asked for a copy of the course packet. While both had seen or had copies of materials related to the class neither could, with certainty, attest to exactly which set of materials were used in the classroom for the course packet.

c) A set of materials that were developed during the course of summer 2007 (see Appendix F). Two copies of these materials were provided to the committee: one copy was provided by Dr. Angelos the second copy was provided by Dr. Lapp. Dr. Manouchehri confirmed that these materials were the result of work undertaken in summer 2007. Another set of materials were provided on March 18<sup>th</sup> to the committee that were shared by Dr. Manouchehri to Dr. Lapp in April 2007 (see Appendix G).

### **COMMITTEE DETERMINATION—Did the Allegation have merit?**

The committee determined that the materials that were prepared by Dr. Manouchehri for and used in MTH 362 in Spring 2007 included materials that she did not create and that were not attributed to the original author(s). Based on this determination the committee concluded that research misconduct, as defined by the CMU policy, had taken place, and that plagiarism, as defined by the NSF, had occurred. The committee noted that the occurrence of plagiarism, as defined by the NSF, does not necessarily meet the NSF's definition of research misconduct and that the level of intent needed to be considered to determine whether or not the act would be deemed as research misconduct by the NSF.

For evidence in support of the committee determination:

a) A copy of the course packet was annotated to show sections that are not original and further, were not cited (See Appendix C). The highlighted sections are crossed referenced with copies of the original source materials. Note that the course materials were not fully reviewed since a preponderance of evidence in the sections reviewed clearly gave evidence of plagiarism. The committee decided that the examples found and highlighted were sufficient to support the conclusion reached. The remaining sections of the course packet may contain further examples of inappropriately cited work.

b) See Appendix E-2 that includes an e-mail message in which Dr. Manouchehri states "I was using other people's materials without citing them... Neither one of them [Dr. Lapp and Dr. DeMeyer] seemed to understand that the material used in the pilot course was not for public use or open to release." Dr. Manouchehri confirmed this in the interview with the committee that took place on November 13, 2008. It should be noted at this point that Dr. Manouchehri has consistently stated that her understanding was, and continues to be, that since the materials were at the draft stage there was no need

for the materials to contain citations and that these citations would be added as the materials evolved. She acknowledged that she was “sloppy” in documenting appropriate citations.

As an additional check, the committee sought to obtain a copy of the course syllabus to determine if any references or citations were listed that would indicate an attempt to cite the material used within the student course packet. Had the syllabus contained the citations, the committee may have been able to take into consideration that the material was at least recognized in some manner as not being original. A copy of the Master Course Syllabus did not contain any reference support for the materials that were not original. We were unable to obtain a copy of the syllabus used in class from Dr. Manouchehri or Dr. DeMeyer.

## **Section 2: Level of Intent**

The NSF gives three levels of intent regarding misconduct, these being:

**Negligent** (or careless) which is defined to be “A person acts negligently if, according to community standards, that person should have acted differently because a reasonable person in the same circumstances would have acted differently” (NSF, 1993, p. 36).

**Reckless** (or grossly negligent) which is defined to be “A person acts recklessly if, according to community standards, that person acts in a way that is a serious deviation from the way a reasonable person would have acted in the same circumstances” (NSF, 1993, p. 36).

**Knowing to purposeful** (or deliberate or willful) which requires “... proof that the subject knew what he did...” (NSF, 1993, p. 36).

The NSF considers that research misconduct occurred only if the level of intent is judged to be at least reckless.

## **COMMITTEE DETERMINATION—What was the level of intent?**

The committee determined that the level of intent was **negligent**. The determination was based on community standards as they apply to draft versions of curricula materials, the circumstances surrounding the CONCEPT project, and information gleaned from the examination of some of Dr. Manouchehri past publications to speak to the pattern of behavior.

The rationale is detailed below.

### Community Standards

The plagiarized materials are a component of a draft version of course materials that were used with students. As such the committee investigated the standards that should be applied to such materials both in terms of the materials being curricula rather than research materials and in terms of the materials being in draft form rather than final form. Another aspect that the committee looked at was whether or not the standards that should be applied differed according to whether the materials had been made public and if so what was defined as the point at which materials were public. The committee considered three different communities: the education research community; the mathematics education community; and the community formed by the CMU faculty members directly involved in the CONCEPT project.

**1) The Education Research Community:** The American Educational Research Community (AERA) has a publication entitled *Ethical Standards* (2002). This book articulates the standards that should be adhered to when undertaking education research..Standard 2. in the *Responsibilities to the Field* section states:

“Educational Researchers must not fabricate, falsify, **misrepresent authorship**, evidence, data, findings or conclusions” (p. 8).

Standard 1f) in the *Intellectual Ownership* section states:

"The work of those who have contributed to the production of an intellectual property ways short of these requirements [that is those not listed as a co-author] for authorship should be appropriately acknowledged within the product" (p. 76).

Taken as face value the course materials used in MTH 362 in spring 2007 violate both of these standards. While these standards apply to research, educational researchers, and to final products the committee was unsure as to whether they applied equally to the curricular materials (rather than the associated research component of the product) and to draft versions of a final product.

## **2) The Mathematics Education Community**

To ascertain whether there is an accepted widely understood set of standards for curricular materials under development the committee interviewed three well-respected mathematics educators who were not involved in the project and who were not judged as having a conflict of interest. Each of these mathematics educators clearly indicated that, ideally, curricular materials, even those under development, should be held to the same standards as published research. That is the work of others should be appropriately cited. There appeared to be general agreement that if the materials were used in a classroom that this use made the materials public.

However, each of these mathematics educators did, to a differing extent, allow for there to be deviation from the ideal or expressed that circumstances might lead to the ideal not being achieved during the period in which the materials were being developed. Examples of this deviation ranged from an indication that while citations need to be included they could be informal to expressing that the pressure of time might lead to the omission of citations to comments that the level of seriousness of omitting citations was lower for materials being piloted and revised in a classroom than for publication.

What was particularly compelling to the committee in terms of making a decision was that one of the interviewees asked that we send a summary of the information we gathered and that a second interviewee suggested that we write a paper or hold a conference session covering this topic so that discussion of the issues relative to the

standards for the development of curriculum materials would be initiated in the community. This communicated to the committee that while there might be a good understanding of the ideal standards that should be applied to curricular materials under development, there was not a widely understood, broadly accepted set of standards.

### **3) The CONCEPT team**

Each member of the project team was interviewed by the committee. The committee asked each team member, other than those involved in initiating the allegation and Dr. Manouchehri, if there had been a discussion of standards of writing and citations among project personnel. The goal of these questions was to determine if the community of project personnel had reached an understanding of the standards that should be applied to the curricula materials as they were under development. Each of the interviewees indicated that no such discussions had occurred and consequently there was no common understanding of the standards to be applied.

In a review of the transcripts, meeting notes, and e-mail exchanges, the investigation team found a range of understandings existed among the seven team members regarding the standards for citations.

Two (those instrumental in initiating the allegations of plagiarism) clearly believed that standards had been breached.

Two did not articulate standards. One communicated that only original work should have been included therefore the issue of citation was moot. The other was a content expert rather than a mathematics educator and hence did not articulate standards.

Two members, as does Dr. Manouchehri, believe that standards were not breached with the rationale being that the materials were in draft form.

### Circumstances

#### **1) Workload**

The creation of MTH 362 was an addition to Dr. Manouchehri's project-related workload.

a) According to the original grant proposal Dr. Vonder Embse (Mathematics Education) and Dr. DeMeyer (Mathematics) were to develop the MATH 362 class. Subsequent to the proposal being funded Dr. Vonder Embse requested and received a one-year leave of absence (later amended to a two-year leave of absence) that began in May 2005. At the time that the leave was granted Dr. Vonder Embse intended to undertake the work associated with creating MATH 362 but his workload precluded him from doing so. In fall 2005, Dr. Vonder Embse informed Dr. Lapp that he would not be able to undertake the work associated with the creation of MATH 362. Dr. Manouchehri agreed to add this responsibility to her existing CONCEPT activities (for a listing of Dr. Manouchehri's original responsibilities see e-mail message dated November 14, 2007 in Appendix E-3). Dr. Lapp confirmed (see Inquiry report in Appendix A).

b) Each course to be developed as part of the CONCEPT project was to be the work of two faculty members: a mathematics educator and a content (mathematician or statistician) expert. Dr. Manouchehri and Dr. DeMeyer agreed that the course materials for MTH 362 were developed by Dr. Manouchehri alone.

Thus, the creation of MTH 362 was not only an added activity for Dr. Manouchehri, but the work was not, as intended, shared among two people.

## 2) Environment:

The committee had several indications that the environment among the project personnel was not positive. Perhaps the most compelling indication of the lack of functionality was the series of events that began in late March 2007. The initial concerns that the course materials might contain plagiarism were raised at this time. These concerns were relayed, by Dr. Meyer, to Dr. Angelos (the then department chair) and Dr. Vermiere (the assistant chair). The concerns were then communicated to the Dr. Kohrman (the then Dean of Science and Technology) and to Dr. Lapp (Project PI). A strategy for resolving the issue was developed by Dr. Lapp and Dean Kohrman. The strategy was that the

course materials be collected from the students and replaced with new materials. This strategy was implemented without Dr. Manouchehri's knowledge and, in fact, occurred while she was attending a conference (the 2007 AERA meeting). Dr. Manouchehri was not involved, in any formal meetings discussing the issue of plagiarism or in resolving the situation nor was she given an opportunity to refute the allegations. Based on our investigation, Dr. Manouchehri's only involvement in the events of March/April 2007 consisted of some interaction with Dr. Angelos. This included Dr. Angelos informally mentioning to her that issues of plagiarism were being alleged against her and Dr. Manouchehri providing Dr. Angelos with a copy of the course packet and asking for feedback from him. In the period April 2007 to July 2007 there appeared to have been a common understanding that the issue of possible plagiarism had been resolved and Dr. Manouchehri continued to work on the grant.

### Pattern

The committee considered whether or not Dr. Manouchehri's past record showed a pattern of plagiarism.

a) The committee members examined four past publications in which Dr. Manouchehri's was either the sole author or a co-author. In two of these publications, our review did not reveal anything questionable. In the remaining two articles, some text was found in which the original author or authors were given credit; however, some phrases taken from the original source were not enclosed in quotation marks for direct text. The committee recognizes that the examination of past publications does not equate precisely to examining works in progress, however, only completed works were available for examination.

b) The committee examined the most recently available set of materials (see Appendix F) created by Dr. Manouchehri for MATH 362. These materials were those created during the summer of 2007 and were not the final version of the course materials. An examination of these materials revealed that much of the earlier plagiarized material had been removed and almost all the material was appropriately cited. The committee

recognizes that it is not possible to determine whether these materials were a consequence of natural evolution or a reaction to the concerns raised in March 2007. Materials received on March 18, 2008 (see Appendix G) were another iteration of the course materials from April 2007. An overview of this material confirmed that these followed an evolution of the packet given to students (Appendix C) to the version of July 2007 (Appendix F).

### **Section 3: Other**

Dr. Manouchehri made several requests of the committee that the committee chose not to pursue. Some of the requests made by Dr. Manouchehri were handled at the administrative rather than the committee level. The requests and the rationale for not following up on them are provided below.

**Request 1:** In an e-mail message dated December 3, 2007 Dr. Manouchehri listed 11 faculty members from the Department of Mathematics and asked that the committee interview each of these faculty members. The rationale provided by Dr. Manouchehri for the committee interviewing these 11 faculty members was that so that the committee could obtain these "...individuals' perspectives on Lapp's accusations...".

**Response 1:** The committee does agree that the motivation behind the allegations being raised, the context in which they were raised, and the extent to which Dr. Manouchehri was excluded from the early discussions relating to the allegations may be cause for concern but that these issues fell beyond the scope of the committee's work in that they do not effect whether or not the allegation has merit. The committee's purpose is to determine whether or not the allegation has merit and if so the level of intent associated with the act.

**Request 2:** Dr. Manouchehri asked that the committee that the committee review materials for two other courses (261 and 363) that were developed as part of the CONCEPT grant.

**Response 2:** MATH 261 was the course developed by Dr. Lapp and Dr. Smith; MATH 363 was the course developed by Dr. Lee and Dr. St John. The committee did not believe that reviewing these materials would shed light on whether or not plagiarism had occurred in the materials prepared for MATH 362.

**Request 3:** Dr. Manouchehri stated that she had concerns related to the Intellectual Property Rights for the materials created for use in the CONCEPT project.

**Response 3:** The Intellectual Property Rights issues were considered by a different committee.

## **Allegation 2**

**Allegation 2: At issue was if Dr. Azita Manouchehri failed to abide by the IRB-approved protocols for this project.**

### **Section 1: Did the alleged act occur?**

A second allegation was levied against Dr. Manouchehri. Specifically Dr. Lapp indicated that Dr. Manouchehri violated the IRB by taking project data with her when she left CMU to take a position at The Ohio State University. (See Appendix E-4).

- The data in question was not raw data but DVDs that had been created from videotapes. The videotapes from which the DVDs were created were all at CMU.
- Some of the data that was reported as missing was later discovered at CMU. (See Appendix E-5)
- Most importantly at the time (July 27, 2007) Dr. Manouchehri left CMU for OSU, it had not clearly been communicated to her that she would not be receiving a sub-contract to continue working on the CONCEPT project.

- Dr. Manouchehri has returned the CONCEPT materials to CMU.

#### **COMMITTEE DETERMINATION--**

The committee determined that the allegation that Dr. Manouchehri failed to abide by the IRB approved protocols for this project was not supported. When Dr. Manouchehri left Central Michigan University her status on the grant team was not determined. Subsequently, some of the data reported missing was found at CMU (See Appendix E-5). Further, Dr. Manouchehri returned additional materials to CMU in November 2007.

A recreated timeline highlights the passage of events and the associated sources of this information. Further, a sorting of the timeline by individuals is provided. (See Appendix H).

#### **Appendices**

- A) Inquiry Report.
- B) Research Integrity Policy.
- C) Collected materials from students in MTH 362.
- D) Assurance Statements.
- E) Email and memo support documents.
- F) July 2007 version of materials.
- G) April 2007 version of materials.
- H) Timeline: Version A—chronological; Version B—by individual