

## CAL Postings

### **SP18.016: Adapting Euler Graphs and Venn Diagrams for the Study Scientific Reasoning**

Faculty mentor: Jeffrey Downard

#### **Overview**

In the 18th century, Johannes Euler developed a system of graphical logic for the purpose of clarifying the role of deductive reasoning in mathematics. In the 19th century, John Venn amended Euler's graphical system and then C.S. Peirce dramatically expanded upon these simple systems in the development of a more robust system called the Existential Graphs. In comparison to the symbolic systems of algebraic logic that are widely studied and taught today, the graphical systems make it easier to visualize the logical relations represented in the diagrams. The first step in this research project is to trace the development of the concept of composition in these systems of graphical logic. My reason for focusing on the concept of composition is that I want to explore Peirce's pregnant suggestion—which runs counter to widely held philosophical views today—that the combination of concepts to form propositions involves the same basic relations of composition that are involved in the combination of propositions to form arguments. In doing so, my goal is to buttress the argument for this claim about the centrality of relations of composition using insights drawn from the historical development of these graphical systems of logic.

The student will support my work on these three systems of diagrammatic reasoning by focusing on the relative simple systems of Euler Graphs and Venn diagrams. Most students are already familiar with these kinds of diagrams based on their studies in high school and early courses at the university. The aim of the student's research will be to see how these systems can be modified to examine the abductive patterns of reasoning by which hypotheses are formulated and the inductive patterns by which they are tested.

#### **What the student will DO and LEARN**

The student intern will learn to use Euler graphs and Venn diagrams for the study of deductive reasoning. Based on this study, the intern will engage in collaborative research under my direction on the use of diagrams generally in the philosophical study of scientific reasoning and help modify the diagrams for the purpose of analyzing inductive and abductive patterns of inference. With this background, the student will analyze paradigmatic examples of scientific reasoning drawn from the history and philosophy of science and use the diagrams to explain what makes some examples good patterns of reasoning and what makes others less fruitful.

#### **Additional benefits**

The study of diagrammatic systems of logic is proving to be a fertile area of research for a wide range of areas including computer science, artificial and computer assisted intelligence graphical and video design, as well as a wide range of disciplines in the natural and social sciences. As such, I will be able to draw from student applicants from a wide range of disciplines and the experience will be a benefit for students with a wide range of interests.

#### **Additional qualifications**

- interest in interdisciplinary research involving the philosophical examination of methods of inquiry

#### **Time commitment**

6 hours/week for 15 weeks

## COE Postings

### **F18.003: Cultural Dimensions of Technology: Exploring Digital Technology Ownership, Usage, and Literacy of Men of Color at Two-Year Institutions**

Faculty mentor: G. Blue Brazelton

#### **Overview**

The qualitative research project will provide the undergraduate intern with the opportunity to analyze data on men of color at two-year institutions and the possible cultural value of digital technology. Participants will be identified and selected from community and two-year colleges in the great Phoenix area. Between 20-30 interviews will be completed by the end of July 2018, and I will spend Fall 2018 and Spring 2019 analyzing the data and writing manuscripts for submission. The project will build toward a second phase of data collection, a quantitative endeavor surveying a broader population of two-year students, about digital literacy in the collegiate context.

#### **What the student will DO and LEARN**

The data collection will be completed before Fall 2018, so the undergraduate intern would be able to be trained in the coding and analysis processes, and either participate in preparing a manuscript submission to a peer-reviewed journal, or be the lead analyst on their own smaller slice of the data for their own output. The intern will learn how to:

- Prepare qualitative data for analysis
- Use various coding schemes, including open, axial, and selective coding, and learn the importance of inter-coder reliability processes.
- Maintain ethical standards for research, including confidentiality, anonymity, data security, and moral responsibility to the data and project
- The analysis process of identifying trends, contradictions, meaning, and larger patterns within qualitative data
- Craft the basics of a grant proposal
- Prepare research outputs (conference paper proposals, poster presentations, manuscript submissions)
- Guide a quasi-exploratory study toward a larger scale quantitative survey research project

The intern will actively:

- Participate in research meetings, both in person and virtually
- Code qualitative data in Dedoose
- Conduct collaborative and independent analysis of the data, both with meaningful involvement from the faculty supervisor
- Create a research output, either in collaboration with the research team or independently

#### **Additional benefits**

The student will begin to craft a foundation of research and a scholarly mindset through the internship, which would be beneficial for those intending to apply to graduate schools, employment that values high-level critical and analytical thinking, or active engagement in one's community and society. The student will also gain a writing sample, of some kind, to be used for whatever purposes it should be appropriate.

#### **Time commitment**

6 hours/week for 12 weeks

## **S19.008: The Diné Institute for Navajo Nation Educators**

Faculty mentor: Angelina Castagno

### **Overview**

The student intern will support a research component for the Diné Institute for Navajo Nation Educators (DINÉ). The DINÉ is a partnership between Northern Arizona University and Navajo schools aimed at strengthening teaching in schools serving Diné and other Indigenous students. The program offers 8-month Fellowships to K12 teachers, during which time the teachers participate in a seminar aimed at increasing their content knowledge around a particular subject area. Each teacher creates a culturally responsive curriculum unit to use in their classroom. Dr. Castagno is the Planning Director for the DINÉ, and she will work with the student intern to study the impacts of this program on the teachers who participate, as well as on the students of those teachers.

### **What the student will DO and LEARN**

The research will involve collecting survey and interview data from participating K12 teachers, reviewing relevant artifacts (such as curriculum units), and observing teachers in order to ascertain the impact of the program on teachers. The student intern will work collaboratively with Dr. Castagno to do this research, as well as to analyze the data once it is collected. The intern will also identify relevant publications to assist with the writing of a research report and a publication. Depending on the skills and interest of the intern, as well as the length of the internship, the student may co-write and/or co-present in various venues with Dr. Castagno. The student intern will benefit from direct research experience, learning about an innovative university-community partnership, and being involved in an important initiative to help NAU become the nation's leading university serving Native Americans. The student intern will also benefit from experience working with the DINÉ leadership team, which is composed of NAU faculty as well as K12 teachers.

### **Additional benefits**

Additional benefits include those associated with most opportunities such as this: building a relationship with a faculty member; and improving skills such as time management, scholarly reading, general understandings of research, responsibility, accountability, taking initiative, etc. An additional benefit is the direct participation in a program that seeks to have an important impact in schools on the Navajo Nation.

### **Additional qualifications**

This I2S position would be especially fitting for a student who has experience in Native communities, and/or with K12 teachers.

### **Time commitment**

5 hours/week for 30 weeks

## **F18.001: School Personnels' beliefs and decisions about children's gender expression**

Faculty mentor: Lisa L. Persinger

### **Overview**

We will deploy an online survey project that will measure implicit bias related to children's gender expression as well as school personnel beliefs and experiences related to having students with transgender and gender diverse identities and expression in schools. The purpose of the project is to see how implicit biases may relate to experiences and practices with gender diverse children in schools.

### **What the student will DO and LEARN**

The student will learn to create qualtrics surveys, search and review relevant research, summarize research articles, work in a research team in a collaborative manner, examine quantitative data from a research study, develop a research poster for presentation, and present a poster at an NAU research event.

### **Additional benefits**

Working with a doctoral student who is also on the project who will be doing a dissertation on a different target population but related to the same constructs.

### **Additional qualifications**

- Open and supportive attitude toward transgender and gender diverse people
- interest in quantitative research methods and understanding implicit bias and how it influences our behavior in the educational environment.

### **Time commitment**

5 hours/week for 12 weeks

## **S19.010: Cultural and Identity Needs Assessment**

Faculty mentor: Joseph Wegwert

### **Overview**

The Culture and Identity Needs Assessment research project is a scientifically-based research study designed to determine, from an employee and leadership perspective, the current strengths at Flagstaff Medical Center (FMC) and Verde Valley Medical Center (VVMC) with regard to care of diverse patients, particularly those from vulnerable populations. In addition, the project will be used to identify opportunities to provide better care for these patients. Questionnaires, focus groups, and individual interviews will be used to reveal resources and/or identify gaps regarding the attitudes, knowledge base, equipment, and physical settings that do – or could – facilitate excellent care.

### **What the student will DO and LEARN**

The Intern2Scholar applicant will be introduced to qualitative research including methods of qualitative site observation, data collection, analysis, and reporting.

DO: The selected student will

- collect observational institutional data at Flagstaff Medical Center and, perhaps, Verde Valley Medical Center regarding the degree of welcoming environment for various identity and cultural groups. This might include, for example, evidence regarding the resources such as accessibility to non-English language signage and/or interpreters, gender-neutral restrooms, culturally relevant or sensitive reading materials, artwork, or displays;
- assist in the development of survey questionnaire to assess staff knowledge, attitudes, resources, and needs in regard to serving vulnerable client populations;
- assist in compiling, reviewing, and analyzing questionnaire data in an effort to identify research themes;

Learn: The selected student will

- understand the theoretical assumptions underlying the qualitative research paradigm;
- understand and develop facility with several qualitative research methodologies;
- understand and value the importance of issues of access and equity in healthcare in regard to diverse and, especially, vulnerable populations;
- understand project planning and execution;

### **Additional benefits**

The student will develop confidence in regard to interpersonal communication, time-management skills, and project planning. Our goal would be to have our I2S present their work (including their understanding of the qualitative research paradigm as well as research findings) at the Undergraduate Research Symposium. Successful engagement and completion of this work will position the student to confidently seek out further research opportunities in the remainder of their undergraduate career.

### **Additional qualifications**

We would be especially interested in students who are themselves interested in work around issues of social justice and equity. While not intended to be exclusionary, we feel students interested in the study of healthcare, women's and gender studies, ethnic studies, indigenous studies, sociology, or anthropology would be a great asset and would benefit greatly from this work.

### **Time commitment**

6 hours/week for 15 weeks

## **S19.012: Using the NEO-PI-III to investigate personality structures among students in different cultures**

Faculty mentor: Ramona Mellot

### **Overview**

This project will investigate the stability of personality structure on college students who move from their culture of origin to a new culture. There is strong evidence to suggest that personality remains relatively stable and predictable across cultures. However, there is some evidence to suggest that personality traits may change when people migrate/move to another country and experience a different culture. The main research question for this study is: How is the stability of personality influenced in college students as a result of involvement with a new culture? We will compare four groups--recently migrated Indian students, US students, Indian students living in India with no intention to migrate, and Indian individuals/future students, who are not yet here but have intentions to move to the US. This study is important not only in terms of assessing the stability of personality traits as a result of experiencing new cultures, but also in the context of cultural influences throughout ones' lifespan.

### **What the student will DO and LEARN**

The student intern will assist with formulating a research question based on the subset of the data, data collection, data entry and analyses, and present their findings at the 2019 Undergraduate Symposium and other venues.

### **Additional qualifications**

COE major if possible; next choice is a psychology major

### **Time commitment**

6 hours/week for 30 weeks

## **S19.013: The development of future-oriented motivation and future-oriented self-regulated learning of college freshmen**

Faculty mentor: Jieun Lee

### **Overview**

Research results indicate that the freshmen retention rate is directly related to the college graduation rate. Currently, higher education researchers recommend redesigning freshmen retention programs for promoting students' future success in their majors and applying rigorous research methodologies to investigate the effects of retention programs. The proposed research adopts the theories of future-oriented motivation (FOM) and future-oriented self-regulated learning (FOSRL), which support students' future academic success. In this study, FOM is defined as students' motivation for developing and persisting in their academic future goals. The FOSRL is the degree to which students are committed to pursue these academic future goals. Three groups of freshmen at Northern Arizona University (NAU) will be recruited to participate in this study. Specifically, these will include 200 at-risk freshmen, 200 not at-risk freshmen, and 200 regular freshmen. We hypothesize that results will demonstrate different growth trajectories of FOM/FOSRL among three groups of students during a single semester, significant factors that predict the positive growth rates of FOM/FOSRL, and the relationships between FOM/FOSRL and program participation. The study results will benefit existing retention programs at NAU and assist in developing effective intervention programs in the state and the nation.

### **What the student will DO and LEARN**

- 1) Survey Development: The student workers will take free online training to learn how to use the Select Survey program to assist with the development of online surveys.
- 2) Organizing quantitative data: The student workers will download data files from the survey program server and make cleaned excel data sets for further data analyses.
- 3) Coding qualitative data: The student workers will code qualitative data (i.e., Possible selves questionnaire) and enter scores into the excel data sets for further data analyses.
- 4) Literature review: The student workers will help find out relevant scholarly articles from NAU library database.

### **Additional benefits**

Under my supervision, the student workers will be actively participated in diverse processes of research projects such as survey creation, data collection, and data entry, and gain a deep understanding of research processes.

### **Additional qualifications**

- Sophomores and juniors are eligible.
- MS Office skills (MS Word, MS Excel, and MS PowerPoint)

### **Time commitment**

6 hours/week for 30 weeks

## **S19.014: Prospective Elementary Teachers' Perceptions and Confidence Regarding Integrated Lesson Planning**

Faculty mentor: Shannon Sweeny

### **Overview**

The proposed study is a mixed methods cohort study of one group of NAU elementary education students participating in the series of courses that includes; ECI 402, 403, 405 and 406, and the corresponding practicum course for ECI 405 and 406. Our intent is to explore the changing perspectives and confidence with which these students approach integrated lesson planning. We will view these students' changing perspectives and abilities through the lens of the 1st and 2nd semester Elementary Education Methods Block (ECI 402, 403, 405 and 406) and corresponding practicum coursework. Mixed methodologies will be utilized to approach our target objectives; 1) tracking the changes in students' self-expressed confidence in regards to integrating content areas, 2) exploring these students' actual lesson plans for concrete evidence of integration, and 3) identifying those experiences across our methods block that were most meaningful and impactful regarding both student confidence levels and concrete evidence of integration.

### **What the student will DO and LEARN:**

For this project, the undergraduate student would work on the following tasks:

- Sort and organize the children's literature books that will be purchased to use for integration of mathematics, science and literacy
- Create an inventory/database of all the children's literature books for integration with information about each book, math/science concepts, etc. This inventory/database will eventually be shared with other College of Education faculty members so they can use the books in their methods classes.
- Compile integration lesson ideas developed by the faculty serving as PIs on the project
- Sort and analyze open-ended responses from survey
- Learn how to do quantitative analysis using the survey data
- De-identify survey data

### **Additional benefits:**

Additional benefits provided to the undergraduate student will be the opportunity to work with four faculty members in the College of Education who can mentor the student in this project and beyond

### **Time commitment**

4 hours/week for 15 weeks

## **S19.015: The Impact of a Phenomenon-Based Science Workshop on Prospective Elementary Teachers' Science Content Knowledge**

Faculty mentor: Marti Canipe

### **Overview**

The concurrent nested mixed-methods study proposed here will explore the impact that phenomenon-based science teaching has on the content knowledge of prospective elementary teachers. This study is a pilot study designed to collect preliminary data that will be used to support a grant application to fund a larger project. In this pilot study, prospective elementary teachers will participate in a workshop focused on one disciplinary core idea: structure and properties of matter. Instead of a traditional lecture-based approach to the content, the workshop will utilize a phenomenon-based approach based on the principles of three-dimensional science teaching as described in the Framework for K-12 Science Education (National Research Council, 2012). Data collected during this study will measure the impact of the phenomenon-based instruction on prospective elementary teachers' content knowledge as well as explore how the prospective elementary teachers' are working to make sense of the scientific ideas.

### **What the student will DO and LEARN:**

This internship will provide the intern with the opportunity to be engaged in all phases of the research project. Prior to the workshops, the intern will assist with preparing and organizing materials for the workshop. During the workshop, the intern will assist with data collection through the taking of contemporaneous field notes. Post-workshop, the intern will assist with data analysis. The preliminary findings of this project will be presented at the Undergraduate Research Symposium during the Spring 2019 semester.

The intern will learn :

- data collection methodologies (quantitative and qualitative)
- qualitative and quantitative data analysis
- skills for preparing findings for presentation to an academic audience
- skills for searching academic journal databases

### **Additional benefits:**

Since this research includes human subjects, the intern will have the opportunity to learn about the requirements for the protection of human subjects. Also, there may be opportunities for the intern to participate in presentations of the research findings at conferences and/or contribute to writing a manuscript for submission to a journal.

### **Time commitment**

5 hours/week for 15 weeks

## **S19.016: Development and Implementation of the Internet-Based Paraeducator Training Program (i-ToPs)**

Faculty mentor: Rebecca Frantz

### **Overview**

Children with developmental disabilities often have limited communication skills compared to their typically developing peers, limiting their access to important learning opportunities through social interactions. Paraeducators are often tasked with supporting the development and inclusion of children with disabilities in early childhood classrooms. An experimental study will be implemented during daily activities in an early childhood classroom to evaluate the effects of an internet-based professional development program created for paraeducators supporting children with disabilities. A "train the trainer" model will be used along with online modules; A teacher will be trained through online modules and video conferencing to use effective collaborative coaching practices to support their paraeducator. The paraeducator will complete online modules and be coached individually by their teacher to use evidence-based strategies to promote communication during a daily activity with a minimally verbal child with a disability. We will evaluate the effects of the program on paraeducator use of evidence-based practices and improved child communication outcomes. We will also evaluate teacher and paraeducator satisfaction with the program to guide future improvements.

### **What the student will DO and LEARN:**

Students will learn about the following research practices:

- 1) single-case research design in Education;
- 2) applied research implemented in classroom settings;
- 3) collecting qualitative data through interviews;
- 4) analyzing qualitative interview data.

Students will learn the following content:

- 1) implementation of an evidence-based social communication intervention for minimally verbal children with disabilities (e.g., autism, speech-language delay);
- 2) effective coaching practices based on adult learning theory; and
- 3) collaboration in early childhood classrooms.

Students will be involved in:

- 1) organizing and updating forms and data;
- 2) collecting data through video observations;
- 3) transcribing and analyzing interview data; and
- 4) conducting phone interviews.

### **Additional benefits**

Students will have the opportunity to present and disseminate data from the study.

### **Additional qualifications**

Course background in early childhood education, early childhood special education, psychology, human development preferred.

### **Time commitment**

5 hours/week for 15 weeks

## **SP18.023: First Generation College Students and the Challenges of Study Abroad**

Faculty mentor: Frances Riemer

### **Overview**

Study abroad opportunities have increased significantly over the past decade as universities across the country have grown their international presence and developed partnerships with educational institutions across the globe. The typical study abroad student is a business or social science major, most often at a private university. NAU offers an opportunity to examine the study abroad experiences of a unique population—first generation college students. Little literature exists on first generation study abroad experiences, and our proposed study will make a real contribution to that body of research.

### **What the student will DO and LEARN**

The student will assist with the following: in depth interviews will be conducted and focus groups will be convened with students (who volunteer to be interviewed on the survey) to further explore and gather rich data on students' experiences. The interviews will be analyzed inductively; interview results will inform questions for focus groups. Focus groups, providing another level of inquiry, may encourage students to respond more freely and openly in response to their colleagues' comments. Approval will be requested from the Institutional Review Board before any data collection begins.

### **Additional benefits**

Presentation at conferences

### **Time commitment**

6 hours/week for 12 weeks

## **Franke College of Business Postings**

### **SP18.007: Simulation games in Management classes**

Faculty mentor: Geoffrey Dick

#### **Overview**

A simulation game has been introduced into a management class in an attempt to aid student understanding of the course concepts. The principal research question to be addressed is: Does the inclusion of the ERPSIM game in the Managerial Decision Making course enhance the student understanding of course concepts? Supplementary research questions revolve around levels of decision making (operational, tactical), the suitability of an ERP system to a management course, and the practical SAP ERP knowledge gained.

#### **What the student will DO and LEARN**

The student will be expected to conduct a literature review around the use of simulation games in the classroom and write a summary of the findings from recent, relevant research papers. In addition the student will become familiar with SPSS and conduct some statistical tests on the data. The student will learn the techniques of a literature review, the development of a research model and statistical analysis techniques. The student will also write a draft paper explaining the objectives of the study and the findings.

#### **Additional benefits**

Involvement in applied research and an understanding of the techniques involved; and at least an acknowledgment, perhaps co-authorship, depending on the contribution, on a published paper.

#### **Additional qualifications**

- an interest in classroom teaching and learning something of analysis using the statistical package SPSS
- strong written communication

#### **Time commitment**

6 hours/week for 12 weeks

## **SBS Postings**

### **S19.002: Media Justice: Cultivating a citizen-based news ecosystem for underserved rural indigenous communities**

Faculty mentor: Jiun-Yi (Jenny) Tsai

#### **Overview**

Northern Arizona is a news desert especially in rural indigenous communities, where news providers have long faced economic and logistical challenges. This research is inspired by the Media Justice movement which empowers underrepresented communities to tell their stories and have agency over media representation. The project will develop an innovative news ecosystem to produce live stories that have been largely ignored in the Southwest. We will test the efficacy and impacts of using hand held mobile devices and social media outlets to strengthen a community-driven news ecosystem centered around mentor relationships among NAU students, local media professionals, and Northern Arizona indigenous citizens.

#### **What the student will DO and LEARN**

Students will participate in developing a community survey, conducting in-person interviews, and analyze audience engagement data on digital platforms.

Students will learn the conceptualization of research project, develop skills in collecting empirical data, and learn how to analyze digital interactions in a systematic way, and summarize research results.

#### **Additional benefits**

Students will benefit from practical aspect of a solution-driven project focusing on foster community engagement with under-reported stories.

#### **Additional qualifications**

- Experience with managing social media accounts
- Basic understanding of social science research methods
- Self motivated

#### **Time commitment**

4 hours/week for 15 weeks

## **F18.005 Plains Indian Women in the Plains Indian Wars**

Faculty mentor: Leila Monaghan

### **Overview**

The proposed project is for a student to work with me to adapt my thesis "Travois Trails and War Songs: Stereotypes and Images of Cheyenne and Arapaho Women in the Great Plains Wars, 1850-1876" into a book. Despite the fact that some historians argue that "Native American woman stand mute in the historical record," going back to original sources and talking with current community members reveals the crucial role women played in these Wars. I am currently in talks with University of Oklahoma Press but as of yet have no formal contract.

As it now stands, the thesis covers the time period from 1850 to 1876, ending with the Battle of Little Bighorn. My proposed book extends this timeline to the late 1800s and will include the 1890 Wounded Knee Massacre and its aftermath as well as the Cheyenne exodus and the 1884 creation and 1900 extension of the Northern Cheyenne reservation.

This student worker would collect both original source documents and secondary sources, possibly interview relevant community members, and compile qualitative and quantitative data from these sources. He/she would also help with bibliographic and other technical work on the manuscript.

### **What the student will DO and LEARN**

The student worker would work with library and online original documents, including through interlibrary loan and public sources such as Archive.org. He/she would compile data from these sources and contribute to the drafting of the chapters on Wounded Knee and the Cheyenne Exodus.

He/she would learn research and editing skills including working with a wide range of data sources and proper bibliographic format. In the case of possible personal interviews, the student would learn to interview and transcribe interviews.

### **Additional benefits**

There might also be possible publication credit for papers or articles co-authored on related topics.

### **Additional qualifications**

Qualifications include a strong background in anthropology or history including demonstrated interest in Native American topics. The intern should also have a strong quantitative and qualitative research background.

### **Time commitment**

5 hours/week for 12 weeks

## **F17.007: Sex from the Margins: Global History of Sexology from India, 1930-50s**

Faculty mentor: Sanjam Ahluwalia

**Overview :** *Sex from the Margins* deliberately chooses a global frame for the history of sexology, using Bombay and its resident sexologist, A. P. Pillay, as a point of entry. In the person of Pillay and his transnational publications such as *Marriage Hygiene* (MH) and *The International Journal of Sexology* (IJS), Bombay became a gateway for global sexological conversations. His career allows us to disrupt the neat, self-referential, Euro, Anglo, American history of sexual sciences, so often represented as the norm. My use of the global in this book project illuminates the multiple circuits within which knowledge, people, print capital, financial resources, and power diffused and circulated to create shared, yet competitive and unequal communities. In simultaneously shifting the geographical imageries and highlighting historiographical partialities and prejudices, *Sex from the Margins* unsettles what has so far been represented as an overwhelmingly Western narrative of the history of sexology.

### **What the student will DO and LEARN:**

**DO:** The student intern will peruse two journals, the *Marriage Hygiene* and *International Journal of Sexology*, to highlight relevant articles for my book project. The intern will also conduct google scholar searches for scholarly articles and books relevant to my field of research. **LEARN:** This research will expose the student to historical research and make them aware of the important academic debates within feminist scholarship on sexuality and sexual sciences.

The intern will be able to draw upon this research to craft her/his own class projects and research papers related to the broad fields of feminist scholarship on sexuality, body, sexual science, world history, and reproductive rights.

**Additional qualifications:** Familiarity with navigating the web and google scholar to identify relevant research materials

### **Time commitment**

6 hours/week for 15 weeks