1. **Title of Curriculum:**

Chair’s Challenge

1. **Abstract:**

Demonstrating the depth and breadth of the specialty of Family Medicine, revealing the complexity of the care that family physicians provide and covering topics that may not fit into traditional curriculum are monumental tasks in the educations system. The “Chair’s Challenge” is a case-based, optional activity offered to third year medical students during a family medicine clerkship. It is prepared and presented by the chairperson of the department and represents memorable, complex cases that cover topics and areas such as rural medicine, special populations, pharmacogenetics and interdisciplinary collaboration. Students are asked to answer questions related to clinical cases and are given rewards for the correct answers. They can read full descriptions of the cases the following week. The Challenge is meant to be fun, thought-provoking and demonstrate the senior faculty member’s involvement in community and scholarship.

 **Contact Information:**

Name: Cynthia G. Olsen M.D.

 Institution: Boonshoft School of Medicine, Wright State University, Dayton, Ohio

 E-mail: cynthia.olsen@wright.edu

 Name: Amanda Bell M.D.

Institution: Boonshoft School of Medicine, Wright State University, Dayton, Ohio

 E-mail: amanda.bell@wright.edu

**III: Has the curriculum been published elsewhere?** No

**IV. Curricular Focus:** Role of Family Medicine

**V. National FM Clerkship Objectives Addressed:**

*The Role of Family Medicine:*

* Discuss the relationship of access to primary care and health disparities.

*Contextual Care: Person in context of community*

* Discuss local community factors that affect the health of patients.
* Discuss health disparities and their potential causes and influences.
* Demonstrate interpersonal and communication skills that result in effective information exchange between patients of all ages and professionals from other disciplines and other specialties.

*Comprehensive Care: Information gathering and assessment:*

* Use critical appraisal skills to assess the validity of resources.
* Formulate clinical questions important to patient management and conduct an appropriate literature search to answer clinical questions.
* Use evidence-based medicine (EBM) to determine a cost-effective use of diagnostic imaging in the evaluation of core, acute presentations.
* Find and use high-quality Internet sites as resources for use in caring for patients with core conditions.

*Comprehensive Care: Lifelong learning:*

* Assess and remediate one’s own learning needs.

*Core Presentations for Chronic Diseases:*

* Find and apply diagnostic criteria.
* Propose an evidence-based management plan that includes pharmacologic and non-pharmacologic treatments and appropriate surveillance and tertiary prevention.
* Communicate appropriately with other health professionals (e.g., physical therapists, nutritionists, counselors).

*Core Presentations for Acute Care:*

* Differentiate among common etiologies based on the presenting symptom.
* Recognize “don’t miss” conditions that may present with a particular symptom.

**VI. Structure of the Clerkship in which the curriculum has been used**

Wright State University, Boonshoft School of Medicine, Department of Family Medicine has had a strong, mandatory six-week clerkship for third year medical students since the beginning of the school. Every medical student has the opportunity in their third year to be placed at a primary clinical site for a six week outpatient clinical training experience. The site location and family physician preceptor is either a community preceptor or with the departmental faculty, located within the family medicine residency program or faculty clinic. There are typically twelve to fifteen students per six-week rotation.

One day of the week, on Wednesdays, all the clerkship students meet for classroom instruction. This consists of rotation orientation, assignments, announcements, didactics, team-based learning exercises, work-shops, and family medicine case reviews. Evaluations and grading also take place during this period. The family medicine Chair introduces “Chair’s Challenge” during the first week, which runs all six weeks of the rotation.

**VII. Program Content and Instructional Strategies:**

The “Chair’s Challenge” is an opportunity for the Chair of the department to engage students in a creative and competitive case challenge with real case studies. The purpose of this exercise is multifactorial and meant to stimulate thought, and not to create an extra burden of work on existing faculty, students or programs.

The “Chair’s Challenge” is another means by which the Chair of Family Medicine can introduce themselves to students as a teacher, a mentor, a practicing clinician and as a scholar.

The Chair has the opportunity to reflect on interesting cases that have been meaningful to him/her, and how it has contributed to their development as a community member, clinician and scholar. This offers a chance to demonstrate that family physicians are able to function as independent researchers and must engage in personal study. The exercise should promote learner autonomy and curiosity.

The cases chosen for the student challenge have patient details blinded as to not provide identification. Topics for the case studies come from real experiences of the Chair that serve the following purposes for our group:

* Rural medicine, zoonotic disease, interdisciplinary collaboration with veterinary medicine
* HIV disease, drug side effects, rash identification
* Occupational medicine, infections disease
* Pain management, pharmacogenetics, family history
* Botanical toxicity, toxic syndrome emergencies, urgent care medicine

The students are informed that participation in the “Chair’s Challenge” is weekly and optional. The cases are posted on a bulletin board in their classroom along with a folder with questionnaires pertaining to that week’s case, and a folder for completed answer form. Each case has a questionnaire containing three questions pertaining to the weekly case. The questions maybe pedagogical in order: basic science, diagnosis/assessment, treatment/care plan.

The previous week’s case is also posted with answers, a brief explanation, and references when appropriate. The students are allowed to work on the case at their leisure, and often do so while on breaks, or after class. They are told they may use all resources available to them such as textbooks, databases, formularies and references.

**VIII. Assessment of Learner Outcomes:**

1. **Scoring**

The Chair determines the outcome by grading the handwritten questionnaires for the single best or most thoroughly answered questionnaire. Occasionally there may be more than one fully correct answer form deserving of recognition, depending on the difficulty level of the case.

1. **Recognition**

The student(s) that completed the “Challenge” with the highest level of competence is recognized the following week by announcement during class. They are awarded the opportunity to choose an item from a grab bag of incentives. These incentives are purchased at the Chair’s expense and run in the range of $4 to $5 and consist of the following items: pen lights, goniometers, EKG calipers, gel pens and highlighters, logo lanyards and key chains, logo badge holders, to name a few.

1. **Student Evaluation of the Experience**

Student participation and assessment of the experience becomes part of the final clerkship rotation assessment. Five components are asked as part of the final student assessment:

1. I participated in the Chair’s Challenge: (Yes\_\_\_\_ No \_\_\_\_)
2. Why or Why Not? (open ended answer)
3. How many Challenge’s did you participate in? (1,2,3,4,>5)
4. The Chair’s Challenge enhanced my learning: (Likert scale 1-5; 1= Strongly disagree, 3=neutral, 5= Strongly agree)
5. Additional comments (open ended answer)

**IX. Lessons Learned**

1. Starting with the least difficult case and progressing to the more difficult cases is more likely to not discourage students within the first week. The point is to keep the experience fun, but still a challenge.

2. When the first week’s case is awarded, and since it should be a less difficult case, awarding several students and recognizing their efforts for participating will garner more interest for subsequent weeks.

3. Introduce areas of study or topics the students may have limited exposure to or not at all. This demonstrates the depth and breadth of the specialty. Do we have time in our clerkships to cover population medicine, toxicology, nutrition, polypharmacy, dental disease, zoonosis, just to name a few?

4. Make the cases personal and embed yourself into the story as a community citizen with longevity. Demonstrate how your presence is important to the community in terms of knowing the population and contributing to public health. Not all cases have to start as “This is a 47 year old male…”. They can begin as “I was a new attending and was called to the ED while on-call…”.

5. Offer a diagram, photo or picture with as many cases as possible to catch student’s interest. They are more likely to stop and notice the “Chair’s Challenge” of the week. This helps the visual learners in the group. These work well for EKG’s, chest radiographs, photographs of external findings such as rashes, toxic plants and substances, chemical structures, and infectious disease.

6. The Chair and clerkship coordinator or faculty must work together to make this work well. The Clerkship director and students can help with what incentives the students may prefer. The Clerkship director and coordinator should assist in the final student assessment of the experience.

7. Students requested an electronic form of the experience become available so that they had greater accessibility, reminders of the Challenge and when it was available, and to offer on-line responses as opposed to paper responses. Some commented they would have liked the answers available to them for review a longer period of time.

8. Specific findings from our student assessment show that:

1. Approximately half of the available clerkship students participated at least once in the Challenge cases.
2. Of the participating students, approximately half completed one case, one quarter completed 2 cases and a quarter completed more than two.
3. When asked if the Challenge enhanced their learning, forty-one percent of students were neutral, however, forty-six percent of students agreed or strongly agreed that the Challenge enhanced their learning.
4. When asked why or why not the students participated in the activity:
	* 1. Half of the students stated that they had forgotten, had no time to participate, felt too busy, or cited accessibility issues.
		2. One third of the students responded positively stating the experience “was fun”, challenging, interesting, enjoyable, helped their learning, or they participated for a reward.
		3. A minority of students stated they “knew the answer”, and this may have been the reason why they did or didn’t participate.
		4. Less than ten percent of students responded negatively stating that they “didn’t like it”, had no interest, didn’t like competing, or found it too difficult.

**X. Explanation of Appendices:**

* **Appendix A:** Explanation of Chairman’s Challenge- This should be posted on the bulletin board for students. It is an explanation as to how the challenge proceeds.
* **Appendix B:** Chair’s Challenge- Week 2. Case Description
* **Appendix C:** Chair’s Challenge- Week 2. Answer Sheet
* **Appendix D:** Chair’s Challenge- Week 2. Case Answers

**XI. References:**

1. Cutler P. Dissection of a Symptom, 3rd ed. Williams & Wilkins. Baltimore, 1998. Chapter 1. Problem Solving in Clinical Medicine: From Data to Diagnosis.
2. Shaughnessy AF, Ebell MH, Slawson DC. Essentials of Family Medicine, 5th ed. Lippincott Williams & Wilkins. Baltimore, 2008. Chapter 3. Information Mastery: Basing Care on the Best Available Evidence.
3. Ramakrishnan K, Mold J, Cook J, Jones A. Bringing Order to the Care of Complex Patients. Fam Med 1998; 30(9):625-6.

**Appendix A**

**CHAIR’S CHALLENGE: CASE OF THE WEEK**

**RULES OF PLAY**

Each week a new case will appear on the board

The cases are REAL and belong to practicing family doctors in the department.

You will be asked a few questions about the case. Pull a blank answer slip from envelope A and complete it including your name. Drop it in the envelope B.

The following week answers will be posted along with the student who had the best answer.

Playing along is optional and not required. This is just for fun. There is no grade attached to this.

**Appendix B: Case Description: Week 2**

This rural medicine case wasn’t mine, but happened to a family member while I was in medical school. The family of my husband (a small & large animal vet) lived in Fayette County, Ohio on a very idyllic farm. It was a great get-a-way on weekends. Greg and I would help his dad and visit the areas of pasture and woods that were cut by a creek. The work involved milking by hand, feeding the livestock, attending to their health, and filling the open stock tanks for the cows and sheep. His father worked repairing equipment in coal mines and also ran a family dairy of Brown Swiss and Jersey cows. Greg’s cow, “Pop,” gave him a little income that helped pay his way in undergraduate school.

I got a call one day that Greg's dad felt very ill, and we went to Lancaster Hospital right away. No one really knew what was wrong. Father had developed a temp of 102° F, and was “very sick” according to Greg’s mom. He had a “terrible headache” (unusual for him), felt awful all over and had muscle aches, felt sick to his stomach and hadn’t been eating or drinking much but didn’t have diarrhea. He didn’t have chest pain and had a bit of a dry cough, but wasn’t really short of breath and didn’t have sputum. He didn’t have a rash but his eyes were blood shot and he just looked bad. I’d never seen him this way.

His doctor spoke with us and was a bit perplexed. His CBC was not remarkable, his BP was stable and pulse was 72. His EKG was normal as was his CXR. His CMP was normal except he was getting dry and his liver enzymes were just a bit high now and his BUN and creatinine were rising. His urine was showing a sp. gravity of 1.020, despite IVF, and proteinuria and hematuria.

Doc was looking at us for some cues. Greg’s dad didn’t smoke or drink, went to morning Mass daily, didn’t travel and rarely ate out. His diet hadn’t changed. Greg turned and looked at me knowingly.

**Appendix C: Answer sheet Chair’s Challenge, Week 2**

Chair’s Challenge: Week 2 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What illness was Greg’s father suffering from?
2. What was the etiology of his father’s illness?
3. What was the treatment of choice?

**Appendix D: Case Answers, Chair’s Challenge: Week 2**

OCCUPATIONAL/ZOONOTIC ILLNESS/RURAL MEDICINE:

Greg’s education included a broad knowledge of zoonotic diseases, and he immediately suspected **leptospirosis**. This was something that was indigenous to the deer population and was spread to cattle through drinking water shared in puddles, creeks and stock tanks. Infected deer would urinate in the water and pass it on to the cattle. Humans typically pick up the disease through contact with animals, urine, or infected water through abraded skin. The human does not need to be in the life-cycle for the organism to live.

This disease is commonly considered an **occupational disease** and is found in farmers, sewer workers, trappers, and coal miners. Greg’s fathers’ hands were often abraded and cut from the hard mechanical work he did and they were immersed in water constantly in the mines and on the farm. Don’t forget he milked by hand. His other risk was that he drank the raw milk that he produced. He had plenty of opportunity to be infected.

Serology tests were drawn and sent to the Ohio Dept. of Health which in turn notified the CDC. There are multiple serogroups of the genus L. interrogens and his labs were highly positive for the IgM antibodies, and later had a 4-fold increase in the IgG antibodies, confirming the diagnosis.

In mild cases treatment can consist of doxycycline orally, however, as in this situation, **intravenous penicillin is the drug of choice**. Shortly after initiating this therapy, father recovered fully and his acute tubular necrosis and symptoms resolved. The family resolved he would not drink raw milk again. Greg drew blood on all the cattle and found several were infected and treated them also. It was a great lesson in learning to collaborate with other professions and knowing what kinds of work people do and the risks that are involved.