**TITLE:** Spatiotemporal Mapping of Postoperative Pain Complications

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**RESEARCH PROJECT DESCRIPTION** (brief overview of background, hypothesis, methods, role of medical student, funding and relevant publications)

**BACKGROUND AND SIGNIFICANCE –**
Severe acute postoperative pain affects over 50% of surgical patients. Recent work by our group suggests spatial disparities in patient experience with inpatient pain management at both regional and national scales. This project will extend upon this prior work by applying spatio-temporal analyses to examine disparities in patient experience with pain management within the inpatient setting.

**HYPOTHESIS –** We hypothesize that spatiotemporal factors, such as the time of day and proximity to nursing stations, will be associated with specific types of clustering as measured by Anselin Local Moran’s I.

**METHODS AND MATERIALS AND DATA ANALYSIS –**
We will request pain score assessments from adult surgical patients who received operative care at any UFHealth location between May 2011 and December 2014, along with sociodemographic and procedural details. Patient location at time of pain assessment will be recorded with random sampling and/or regionalization of location to protect patient anonymity. Autodesk maps will be obtained from physical plant division of UFHealth. Using ArcGIS, we will test for global and local Moran’s index to determine the degree and type of spatial clustering across multiple distances on a floor-by-floor basis.
ROLE OF MEDICAL STUDENT –

The medical student’s roles will include integrating data from multiple sources, encoding into a geospatial platform using ArcGIS, and then using ArcGIS to calculate measures of clustering such as Moran’s Index across multiple distance thresholds.

FUNDING SOURCE – This work will be supported by the Dept of Anesthesiology; the PI is supported by NIH K23GM102697.

RELEVANT PUBLICATIONS –
