**PROJECT IDEA LIST**

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| # | Project Name | Description | Unit |
| 1 | Student Sign-in System (S3) | The system is to maintain a record of information provided by the user  Detailed description: Students who utilize the MAC's service will fill out a front facing form every time they visit the MAC. MAC staff will fill out hidden fields on the back end of this form after each service visit. A sample of the front and back end of the form are below.  Front end: [Url](https://www.surveygizmo.com/s3/4353690/MAC-STUDENT-SIGN-IN-SUMMER-2018)  Back end: [Url](https://drive.google.com/open?id=1ioM8k3D8ncv1-xjNAOfAL9lUGoASCbYA) | Math |
| 2 | Tutoring System (TS) | The system should be able to monitor the service received/provided by/from students/faculty  This system works hand in hand with (S3) and should give MAC staff the ability to track, view and report out metrics which include (but are not limited to) visit duration, visit by student, by course, by CRN, by instructor. Automation is also required to tally each metric within a given period e.g. week, month and/or term or other date range. | Math |
| 3 | Scheduling System (SS) | The system is to allow users to schedule the resources (TAs, Rooms, Time Slots) efficiently and effectively  Scheduling system for rooms: Both the Department of Mathematics and the Math Assistance Center require a room reservation system. This system should allow each end user to view room availability in real time, view rooms currently available or already reserved and reserve desired available rooms. This system will have to update in 'real time' to prevent simultaneous requests for the same resource at the same time. Ideally, we would like to integrate this system into and online calendar that can be merged into Drupal.  Scheduling system for other personnel: The Math Assistance Center will require a scheduling system for its personnel. This system will allow personnel to enter in a daily availability, from that availability the system should be able to assign shifts based on specific attributes, e.g. if 2 Calculus students are needed from 12pm-1pm, the system can recommend specific personnel who are available during that time and have the "Calculus attribute." There will be several variables and constraints e.g. Student A may only be able to work 10 hours per week, or student B prefers to work afternoons etc. | Math |
| 4 | Service Analysis System (SAS) | The system is to conduct intensity analysis to determine the busy time periods.  This purpose of this system is to help inform how we allocate or re-allocate tutor personnel and operation hours during the week. It is critical for this system to track the number of student visits within any given hour (possibly 30-minute interval) and summarize a report of both the peak and least busy times for each course e.g. on Tuesdays between 12pm-1pm, 20 students require help for MATH 1571 on average. It would also be helpful if the output could automatically generate a bar graph with summary statistics (min, max, range, median and average). | Math |
| 5 | Thesis Management System (TMS) | TMS is a system that allows the student to streamline the process of composing necessary steps in compiling and submitting the manuscript. | YSU Grad School  Sal Sanders  [sasanders@ysu.edu](mailto:sasanders@ysu.edu) |
| 6 | Interactive Product Library System (IPLS) | creating engaging online content and managing product library | YBI- Project  Bill Jupp  [Parkinteractive3d@gmail.com](mailto:Parkinteractive3d@gmail.com) |
| 7 | Computer aided Dosimetry Calculations (CDC) | Brief Summary  Goal – computer aided dosimetry calculations for radiation oncology treatment planning designed to optimize the radiation dose delivered to the affected organ based on CT planning while minimizing collateral damage to adjacent structures  Variables – beam strength, time of exposure, overlying tissue (there is a function here for scatter and absorption), “N” direction of beam angle choices, others to be determined  Thresholds minimum achieved levels in all of the targeted tissues, maximum levels in specific NON targeted tissues, overall limit collateral radiation | Mercy Health  Michael Paronish  [mparonish@mercy.com](mailto:mparonish@mercy.com) |
| 8 | Behavioral Pattern Monitoring System (BPMS) | Behavioral pattern Monitoring System from the perspective of eating, treatment, medication use, exercise, and daily psychological status | Mercy Health  Cary Jordan  [cjordan@mercy.com](mailto:cjordan@mercy.com) |
| 9 | SONERE | Relational Representation of the Social Network -- In this project you can use your contacts in social network to automatically layout the map of extended members and associated communities. Think about it like an agent that will follow each contact to map out the members in the virtual neighborhood. This needs some knowledge in graph theory. | Dr. Bayrak |
| 10 | SoCDiN | Social Connection of Disease Network -- Using the symptoms associated with each disease, building a network among the disease. This has 3 phases. Phase I.  Building the disease repository using the information available on the internet. Phase II. using the common attributes in each disease, building a current dependency-based disease network. Phase III. Using the degree of similarities, building a future disease network. | Dr. Bayrak |
| 11 | DySoN | Dynamic Social Network -- you need to build a social network that will allow users to enter the real world as an infant user but matures with the daily created profile (based on actions). | Dr. Bayrak |
| 12 | SoN-CA | Simulation of Social Network using Cellular Automata -- This project requires very good understanding on the cellular Automata theory and association based on similarities. | Dr. Bayrak |