

Introduction/Dates

January 22 Sponsor Presentations
January 29 Project Selection Presentations
March 19th Project presentation
May 21 Feature Freeze and Delivery
June 11 Final presentation

Skills for Developing Software Products

- Organization
- Coordination
- Communication (internal and external)
- Planning and Documentation
- Just-in-time learning
- Effective meetings
- Working in teams

Team Meetings

Tuesday/Thursday meetings

Stages of teams

Stage 1: Forming
Stage 2: Storming
Stage 3: Norming
Stage 4: Performing
Stage 5: Adjourning

Team Contract

Purpose is to accelerate the team's development, to increase individual accountability and to reduce the possibility for team conflict.

- Establish team procedures
- Identifying expectations
- Specifying the consequences for failing to follow these procedures and fulfill these expectations
- Specifying tasks and roles, including down to the person and who is going to take on roles
- Roadmaps — > specify time and place for completion of parts

Guiding Principles

Resolving disagreements rather than burying them
over riding concern is meeting the sponsor's needs
Look for what will work, not what is wrong
Speak positively about the team and the organization at every opportunity
Help each other be right, not wrong
Look for solutions to problems that come up rather than finding fault
All members should feel good about this experience
Training gives us skills and confidence

Presentations

Diversity and Inclusion App

Requirements:

Develop a real time interactive solution focusing on employee engagement and Diversity and Inclusion

Skillset Recommended

EQ (Emotional Intelligence) Software Development Social Media

Not platform restricted

This is a huuuuuge open no expectations type project. It's a very ambiguous project to increase diversity... Somehow.

Street Smart

Help a transportation and health nonprofit migrate a custom built website to an editable CMS for greater diffusion and ease of maintenance

User information/profile, Community profiles

Welcome.thinkstreetsmart.org

Kelly Rodgers, Executive Director

kelly@thinkstreetsmart.org

Development of an app to report hate incidents in Portland

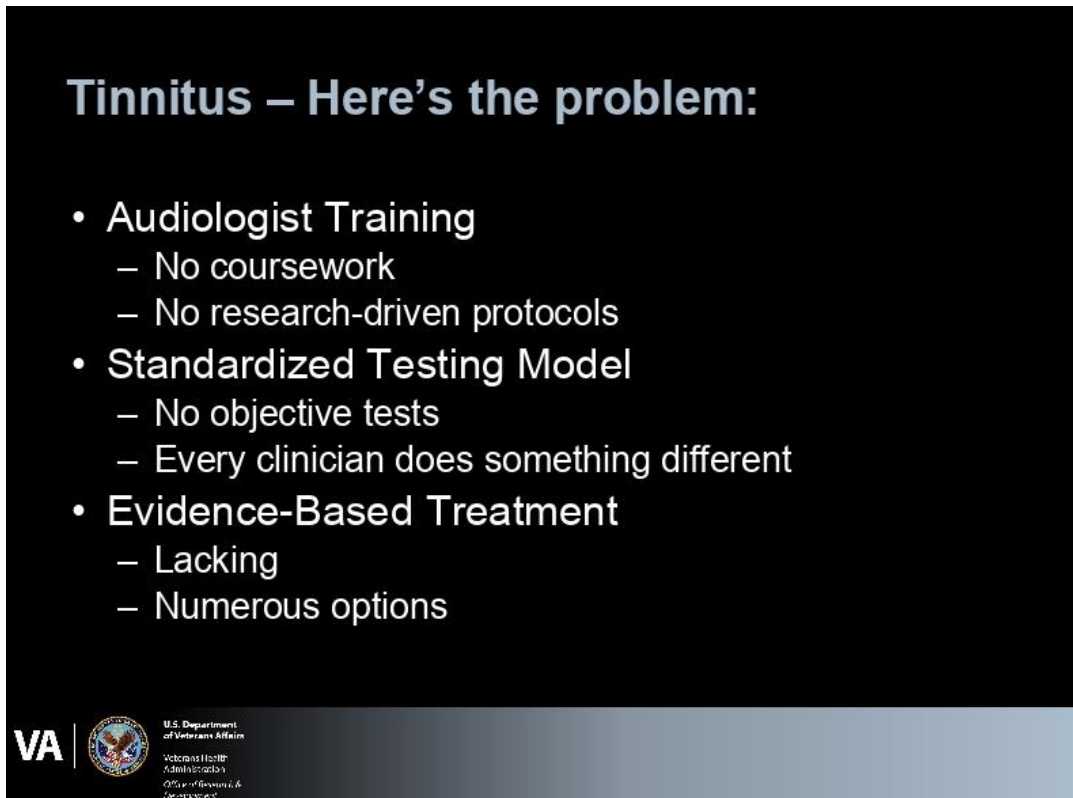
VA Tinnitus Care Plan

Candice.Manning@va.gov

503-220-8262 x52448

<https://www.ncrar.research.va.gov>

There is a basic algorithmic thing in place. With this, we will be testing and using different things
Project is already up on github to be worked on
This is a lot of background database work. This would be to set up the database and connect with it.
Databases with input from the already existing forms
Tracking usability, feasibility

A presentation slide with a black background and white text. The title is "Tinnitus – Here's the problem:". Below the title is a bulleted list of three main points, each with sub-points. At the bottom left is the VA logo, and at the bottom right is the U.S. Department of Veterans Affairs seal and text.

Tinnitus – Here's the problem:

- **Audiologist Training**
 - No coursework
 - No research-driven protocols
- **Standardized Testing Model**
 - No objective tests
 - Every clinician does something different
- **Evidence-Based Treatment**
 - Lacking
 - Numerous options


VA |  U.S. Department of Veterans Affairs
Veterans Health Administration
Office of Research & Development

Figure 1: VA

My solution:

- A development study to promote consistency among VA audiologists in tinnitus care by refining, simplifying, and streamlining a clinical algorithm based on evidence-based research
- Create a web-based application for the Audiologist and patient in order to provide:
 - Questionnaires and audiological tests
 - Recommendations for both clinician and patient
 - Educational information in the form of interactive screens and videos
 - Referral links for interdisciplinary care


VA |  U.S. Department of Veterans Affairs
Veterans Health Administration
Office of Hearing, L.B. Development

Figure 2: VA

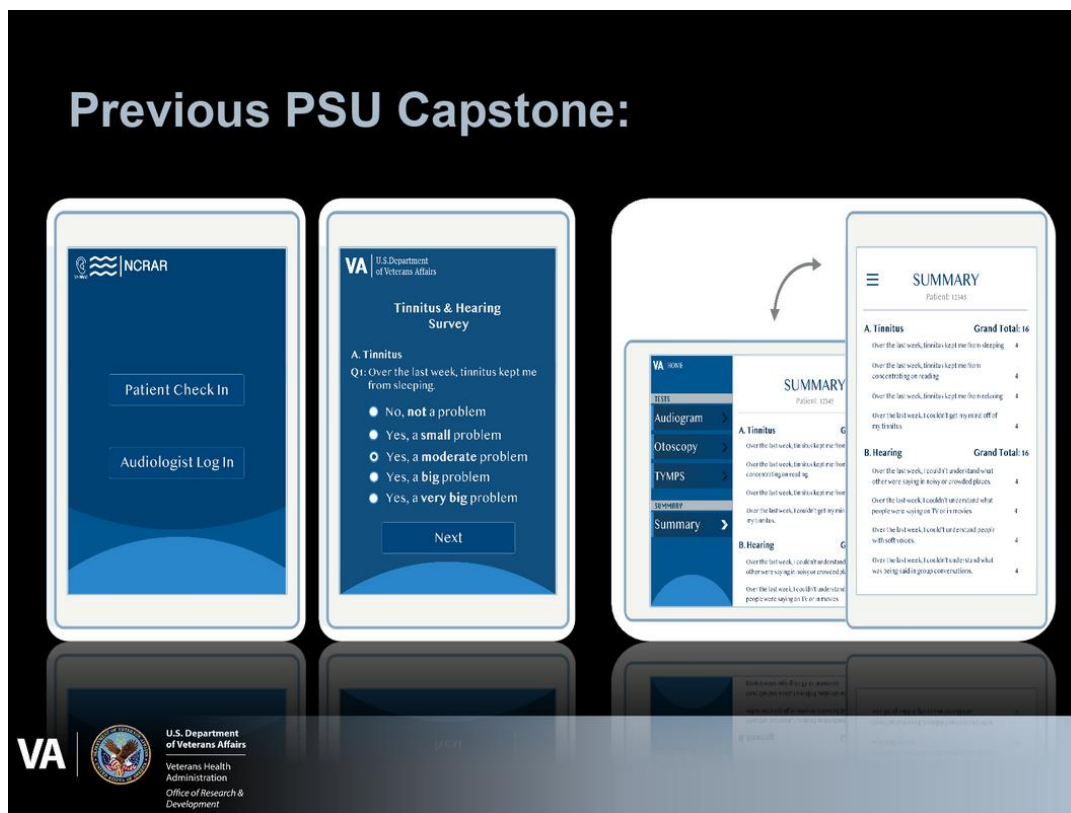



Figure 3: VA

Current Capstone Project

- Pilot-testing the feasibility of the tablet:
 - Sample population of Veterans and Audiologists
 - Validated questionnaires reporting satisfaction, usability, and acceptance
- Project goal:
 - Create a database to collect and store data entered into the program



VA | U.S. Department of Veterans Affairs
Veterans Health Administration
Office of Research & Development

Figure 4: VA

Development of a dashboard for selected Urban Key Performance Indicators

Web based dashboard

It's proof of concept not actual product and data



Figure 5: City of Portland



Figure 6: City of Portland

Capstone 360 Review System

The State Of Things

So far, my tooling has consisted of spreadsheets, handbuilt Python and Bourne Shell scripts, and generic web tools.

- Sponsor stuff in a bunch of ill-maintained spreadsheets
- Front-facing and mgmt stuff on a wiki
- Internal mgmt stuff in files on my boxes
- 360° Reviews in Google Forms with Python processing

This last is a particular pain point.

Figure 7: PSU

360° Reviews

360 form is highly standardized; processing is not

- I build a customized Google Form
 - Students fill it out, I collect CSV
 - CSV run through Python to get
 - Formatted reports
 - Static Dashboard HTML pages
 - I scan Dashboard and figure out stuff to do
 - Paper returned to Team Leads for student review
-

Figure 8: PSU

I Can Haz Webapp?

- MVP: 360° Reviews
 - Needs list of students and teams
 - Student submission of 360s
 - Analysis of 360s on instructor Dashboard
 - Format 360s for paper return to students
 - Stretch Goal: Manage Team Leads
 - Student self-nomination
 - Student selection interview
 - Stretch Goal: Manage Teams
 - Selection, Rosters, Contact Information
-

Figure 9: PSU

Webapp Constraints

- Stock Linux hosting. No containers. Server-side driven by Apache2 and/or nginx. Postgres database
- Language matters: something modern but maintainable
 - Minimal client-side Javascript
 - Python strongly preferred for server-side: not Django / Joomla, maybe Flask. Definitely not PHP. Other server-side languages we could talk about: Go, maybe Java

This app will likely be used for 10+ years, maintained by someone like me

Figure 10: PSU

Security!

This webapp deals with student information: Family Educational Rights & Privacy Act applies. Privacy matters!

Security is going to have to be designed in from the ground up.

User authentication should be done by via PSU's Odin Account Manager or PSU's Google Auth; Web security best practices should be followed

Figure 11: PSU

I Have Software

I can supply you with the Python code and shell scripts I've written for 360 management

These aren't a solution, but they'll help you with requirements

Figure 12: PSU

Presentations round 2

Robot Project

OP3 Enhancement

ROBOTIS OP3 is the lowest robot platform, based on linux

Improving the vision algorithm for soccer playing mode

Replicate open source pose estimation demo and add replay mode

-- > so a new module

Stretch Goal -- > add biomechanical calculation to ensure stability

See movement and then recreate it with the robot

PSU-Connect App

New PSU app with a social platform approach

Requirements:

- Student Profile
- Capus Connect
- Student Services

So... Facebook, craigslist, rideshare, Jobs classifieds, internship opportunities, all rolled into one.

App(Target) or mobile friendly site

Android, iOS

Code needs to be open source

Supes cool start from scratch not taking over the framework

Oooooo, the Psu app has been updated to have some of these features now so maybe not all of these features

Adopt One Block

graphic space to line gridding

Needs to be scalable to take any map and draw the boxes

Python package for the OCCAM data mining software

Machine learning method from the systems science community

Reconstructability Analysis

C++ application with a Python wrapper

Machine learning and data mining

learn about RA and work with the research team

occam-ra.io the occam project on github.

Beautiful Portland website

Dude gnarly, lets make a website

- Database of donors
- Receive donations through paypal
- sign up calendar for volunteers which could interface with a google calendar or sign up software
- post blogs and send out emails to donors and volunteers

This is really a website to organize as much information as possible