

# Pinkerton Academy

## Spring Program Advisory Agenda

### Computer Programming

Date: April 21, 2016

### Pinkerton Academy Career & Technical Education

#### Board members present

Benedetto	David	Computer Science Instructor	Pinkerton Academy
Comeau	Mark	Software Engineer	Maverick
Couture	Dan	Software Engineer	Dyn
Emrick	Ron	Director of Engineering	Wasabi Ventures
Herrin	Justin	Professor / Web designer	Manchester CC
Kuegler	Michele	Dean of Content & Instruction	Wasabi Ventures Academy
Messa	Norm	Computer Science Teacher	Seacoast SoT
Moran	David	IT Systems Analyst	BAE Systems
Rodgers	Kevin	Software Engineer	EMC
Sabin	Mihaela	Computer Science Professor	UNH Manchester

#### Discussion topics

1. Introductions / Advisory Membership List Update
  - a. The board welcomed a few new members - Justin Herrin, Michele Kuegler, and Kevin Rodgers were attending for the first time.
  - b. Advisory list has been updated, including attendance over the past 4 meetings.
2. Program Highlights
  - a. Student internships summer 2015 & ongoing -
    - i. Ron discussed his experiences with two Pinkerton students (Kyle Moran and Adam Hayward) last summer, and his goals for the upcoming summer (we are working to get a PA student working with him again).

- ii. David discussed two students who have been working with local publisher Nutfield publishing. These students (Andrew Cunningham and Meghan Donovan) have effectively established and are running the wordpress web development wing of the business, including development and business operations.
  - b. Independent studies / "Think Tank"
    - i. David discussed these initiatives. Four students are currently involved in independent studies. One student (Andrew Cunningham) has also established the PA "Think Tank," which is a completely student-run organization to bring together students who are pursuing independent initiatives, especially active in web/app development.
  - c. AP Computer Science available 2016-17
    - i. Programming 2 was already mostly aligned with AP Computer Science, so we completed the course audit process and were approved. The initial plan was to offer these two courses concurrently, and to differentiate to reflect the differences in grade weighting between A and AP-level courses. (more below)
3. Review of Enrollments for 2016/17
- a. Programming 1 (CP1): 57. Once again, three sections will be offered. Although this is slightly less than enrollment for this course in 2015/16, this likely reflects the fact that more students are now in the level 2 course.
  - b. Programming 2 (CP2) / AP: 27. This is a significant increase over 2015/16. Since the combined number is greater than lab capacity (24), these courses will now be offered separately, although there is a significant amount of overlap in the curricula.
  - c. App Development: 10. This is a slight decrease from 2015/16. This is likely due to the fact that several current students are simultaneously enrolled in CP2 and AppDev. From this year to next, students were encouraged to instead take the courses sequentially, which should lead to increased enrollment in 2017/18, should the course be offered (more below).

*Note: at this point, conversation naturally turned to some other topics and so the original agenda was not strictly followed.*

4. Equity in Computer Science (CS)
- a. Several board members were interested in discussing the topic of broadening access to CS. This has been a core initiative since the inception of the board. Female enrollment is still low (~20%), and the initial course, CP1, is not an appropriate introductory computer science course for all students, since it is an A-level course which focuses primarily on programming rather than the broader topic of CS.
  - b. Mihaela is very involved in these efforts statewide, including several PD initiatives with the UNH STEM Discovery Lab. <http://goo.gl/OG3Fge>

5. Announcement of David's resignation and acceptance of STEM Coordinator position with NHDOE.
  - a. David announced that he will be finishing this school year and then starting as the state STEM Coordinator beginning in July. In this role, he will be working on several overlapping goals, including: Pre-K through postsecondary curriculum alignment to modernize STEM (Science, Technology, Engineering, Math) education with strong emphases on CS and equity for underrepresented populations (females and minorities); professional development to prepare administrators and teachers to develop and deliver this curriculum; partnerships with industry and postsecondary institutions for workforce development and talent retention; and more.
  - b. David gave some handouts on national and state initiatives to increase access and equity in computer science education. These handouts included:
    - i. Fact sheet for President Obama's CS For All initiative: <https://goo.gl/i7Rdem>
    - ii. NH Governor Hassan's Executive Order regarding the STEM Task Force: <http://goo.gl/u3lPzk>
6. Board shared personal experiences about CS and discussed importance of CS education.
  - a. The discussion of these initiatives led to a very open conversation in which many of the board members explained how they were drawn to CS and what makes them passionate about it.
  - b. The board discussed the relationship between computer science and programming / coding. Computer programming and software engineering are subsets of the broader topic of CS, which is really about problem solving. The board unanimously agrees that ALL students should be exposed to CS, and that students who become very interested can then go on to pursue courses that are more specifically focused on software development, such as the courses in PA's program. Exposing ALL students to CS will help to ensure that underrepresented talent does not fall through the cracks.
7. Discussion turned back to Pinkerton Academy's offerings.
  - a. David shared a proposed plan to add an exploratory course, Exploring CS, which would provide another pathway into CP1. This could be accomplished by (A) a new course addition (preferred), or (B) discontinuing App Development in order to establish Exploring CS.
    - i. This plan is outlined in this document: <https://goo.gl/tODVZE>
  - b. The board unanimously supports efforts to add Exploring CS as another pathway into CP1.
  - c. David also shared his efforts to broaden exposure to CS at PA beyond CTE. He had some early discussions with Dr. Chris Harper, PA's Dean of Curriculum & Instruction. These were met with hesitation. However, Dr. Harper is retiring and his position will be filled by Derek Lee, who was a member of the Tech Integration Committee with David. David will resume discussions with Derek with the hopes that PA will pilot programs to incorporate CS into the math & science curricula.

*Note: at this point, time expired and the board joined other CTE programs for the banquet in the Astro Cafe. Several conversations resumed over dinner. The board is excited about the future of CS and STEM education in the state, and will attempt to help fill the position vacated by David.*

~~8. CTSO Outcomes (if applicable)~~

- ~~a. Programming competitions: Dyn, SkillsUSA~~

~~9. Performance Indicators/Program Data~~

- ~~a. See program quality rubric & notes~~

~~10. Program Improvement Initiatives~~

- ~~a. Focus for goals 2 & 3: "All Aspects of Industry," "Employability Skills"~~
- ~~b. Continued focus on PBL & industry partnerships.~~

~~11. Budgets (must reflect details in the minutes)~~

- ~~a. Program is not in need of additional technologies at this time.~~

~~12. Curriculum Alignment — review CMaps and DoE program competencies~~

- ~~a. Curriculum materials available on [www.mrbcompsci.com](http://www.mrbcompsci.com)~~

~~13. Additional Topics to be determined by the instructor~~

~~14. Open Discussion~~