Annual Progress Report for Postdoctoral Scholars

Name of Postdoctoral Scholar: ___John Doe_____

Start date of internship: _____

Department or School: _____

Signed by:

_____ _____
Postdoctoral scholar date

_____
Mentor (name in print)

_____ _____
Mentor (sign) date

_____ _____
Mentor (if more than one) date

Approved by:

_____ _____
Office of Postdoctoral Programs date

A. Self-report by the postdoc

- **List or briefly describe major research accomplishments this year**
  - Published a journal paper in the Journal of Automation in Construction.
  - Submitted 2 other journal papers that are under review.
  - Collaborated in developing a research proposal that was funded by PacTrans.
  - Developed and presented a conference paper at the ASCE workshop of computing in civil engineering.
  - Collaborated in several research projects (participated in data collection and analysis, writing reports, etc.)
  - Joined the ASCE data sensing and analysis committee

- **List new techniques/expertise acquired this year:**
  - Expertise:
    - Basics of writing research proposals
    - Leading research projects
    - C++ programming
    - Mentoring undergrad students
    - Reviewing journal papers
    - Designing experiments
  - Techniques:
    - Lidar intensity correction and calibration processes
    - GPS data collection
    - Total station work
    - Photogrammetry

- **List references for publications submitted or published this year. List references for abstracts that were presented at meetings. In each case, underline your name in the author list.**
  - [redacted] (2015) Cluster-Based Roof Covering Damage Detection in Ground-Based Lidar Data. *Automation in Construction*, 58, 19-27.
  - [redacted] (2015) Laser Scanning Intensity Analysis for Automated Building Wind Damage Detection, *Computing in Civil Engineering 2015*: pp. 199-205.
  - [redacted] (expected 2015) A Review of Lidar Radiometric Processing: from ad hoc Intensity Correction to Rigorous Radiometric Calibration, *Sensors*, (Under review)
  - [redacted] (expected 2015) A Lidar-Based Methodology to Evaluate Fragility Models for Tornado-Induced Roof Damage, *Natural Hazards Review*, (Under review)

- **Did you write any grant proposals this year, or assist in writing them?**

Yes:

3D Virtual Sight Distance Analysis Using Mobile Lidar Data,
PI: [redacted], Co-PIs[redacted], Sponsor[redacted]

- **List honor/awards received this year.**
  N/A

- **List intellectual and/or technical collaborations established or continued this year.**
  - Collaborating with OSU professors in the areas of geomatics and transportation to develop computing techniques to extract available drivers' sight distance from lidar data collected from roads.
  - Developing radiometric calibration techniques for scanning systems at OSU geomatics lab. Collaborated with geomatics faculty and another graduate student.
  - Collaborated with a diverse research team (Researchers within OSU and other organizations including structural engineers, transportation engineers, and geomatics engineers) on preparing the final report, guidelines, and training materials related to the project "Assessing, Coding, and Marking of Highway Structures in Emergency Situations".
  - Participated in two field data collection efforts for the project "A Platform for Proactive Risk-Based Slope Asset Management".

- **Referring to the table of goals to achieve competencies developed in your IDP, which expectations did you meet? Which were you unable to meet? For those that you could not meet, describe the factors that prevented you from meeting the expectations and how they might be remedied in the coming year.**

Expectations that I met:

- Research Skill development:
  - Wrote a paper, wrote a research proposal, and got a journal paper revised and published.
  - Designed an experiment (will be conducted end of summer).
  - Completed a comprehensive technical literature review (ended up to a journal paper).
- Discipline specific conceptual knowledge:
  - Audited the GPS class in Spring 2015.
  - Conducted a comprehensive literature review about lidar intensity processing and applications.
  - Participated and assisted with class labs (laser scanning class).
- Communication skills:
  - Taught the geomatics seminar course for 2 quarters.
  - Attended and presented at the ASCE IWCCE conference. Networked with other researchers.
  - Collaborated with faculties and researchers in and out of OSU within research projects.
  - Attended phone and in-site job interviews.
- Professionalism:
  - Joined an ASCE committee (Data Sensing and Analysis).

        - Reviewed papers for the ASCE Journal of Surveying Engineering.
    - Leadership skills:
        - Lead the development of a journal paper.
        - Leading collaborative research projects.
        - Assisted in mentoring undergrad students at our research lab.

Expectations that I did not meet:

- I did not begin collaborations with some faculty and students in construction. This upcoming year, I will collaborate on a new project related to construction. Also, we are going to write a new related research proposal on this topic.

• **Describe and explain your overall level of satisfaction with your internship in the past year.**
This past year was a great experience for me. I expanded my knowledge in the geomatics area, developed several technical skills, and learned many new things. I could participate in several research projects. I experienced writing research proposals for the first time. I also had the opportunity to lead research projects and papers. I also enjoyed working with my supervisor, other professors at OSU, and our research group. Overall, I am very satisfied with the past year.

B. Mentor(s)' report

Describe your level of satisfaction with the postdoc's performance over the past year. If there are deficiencies, what steps can be taken by both the postdoc and the mentor to improve in the coming year?

Overall, I am satisfied with [redacted] performance this last year. [redacted] has been a role model to others in the lab and has made good progress in his research. He has done well balancing his role between a few projects and helped out as needed. He has been very proactive to seek out learning opportunities and experiences. He also taught a geomatics graduate seminar that was well received by the students and a good forum for them to expand their research capabilities. He has some experiments currently underway that should lead to additional publications this next year. [redacted] had an interview for a faculty position at Cal Poly Pomona. Unfortunately, he was not selected for the position; however, he did well in the interview.

C. Plans for up-coming year (to be prepared by the postdoc and approved by the mentor(s)

• **Briefly describe research plans for the coming year**

- During Summer 2015, [redacted] will develop and conduct an experiment to perform radiometric calibration on instruments at OSU. In conjunction with two faculty and other students participating in this research, we will then evaluate the effectiveness of that process in improving feature extraction and classification from lidar datasets. This

will be developed into a journal paper that we can hopefully submit by the end of Fall 2015.

- [redacted] will lead the PacTrans research project (Summer 2015 – Summer 2016). In this project he will be working with two faculty members and a student researcher. He will also help develop the project report and lead a journal paper from the project (Winter 2016).
- [redacted] and the faculty mentor will develop one or two new proposals during the upcoming year. For these proposals, we will target research topics related to construction area and national venues such as NSF so that he can get experience with a larger proposal process and in multidisciplinary areas.
- [redacted] also collaborates with other researchers in a new project funded by the Federal Highway Administration related to the use of geospatial technologies by DOTs. [redacted] role will be to synthesize literature and evaluate accuracy, resolution, and precision capabilities of various instruments as well as document their limitations from a variety of case studies. This project will also focus on Unmanned Aircraft Systems, which will be a new area of exploration for him.
- [redacted] will help finish the project deliverables for the NCHRP project "Assessing Coding and Marking of Highway Structures in Emergency Situations." These are currently under review by the overseeing Panel.

- **Re-define, as appropriate, your goals for achieving competencies in the coming year**

Competency	goals	Expectations of postdoc	Responsibilities of mentor(s)
Discipline specific conceptual knowledge	1. Expand geomatics knowledge and skills by participating in classes and activities in the geomatics group at OSU. 2. Increase knowledge of lidar sensors mechanism and effective factors on data collected. 3. Gain experience with geomatics tools and instruments. 4. Expand knowledge on BIM and Virtual Design and Construction	1. Attend Geomatics professional workshop series. 2. Read relevant literature and develop experiments to study how sensors work and how results can be improved. 3. Participate/assist in class labs to gain experience of working with instruments and tools. 4. Audit the CCE203 VDC class in Winter	1. Allow the post doc to spend a portion of their time for auditing classes as part of their professional development hour allocation 2. Give the opportunity to [redacted] to assist and help teach labs 3. Help link with relevant colleagues
Research skill development	1. Practice experiment design and implementation (specifically experiments for improve understandings about lidar sensors) 2. Gain experience in peer review process	1. Design and conduct experiments to develop process to calibrate lidar sensors 2. Participate in additional journal paper reviews	1. Provide opportunity, tools and maybe student assistance to conduct experiments. 2. Invite [redacted] for another journal paper review
Communication skills	1. Improve skills of writing technical papers and research proposals 2. Improve teaching skills, experience, and portfolio 3. Develop presentation skills 4. Grow network in the field	1. Develop and publish papers explained in the career goals section 2. Collaborate with the mentor on writing new research proposals explained in the career goal section 3. Take advantage from opportunities at OSU such as the faculty 101 courses, center for teaching and learning.	1. Provide guidance and feedback on writings and presentations 2. Help [redacted] prepare his teaching portfolios specifically for classes similar to what the mentor teaches at OSU 3. Provide opportunities for [redacted]

		4. Continue to teach the geomatics seminar course 5. Audit classes, assist with classes at OSU, collaborate with faculties to prepare teaching portfolios 6. Attend and present in conferences (e.g., Pactrans, Oregon Surveyor's Conference) 7. Develop and Teach the CCE 203VDC course in Spring	to collaborate in writing research proposals
Professionalism	1. Begin participating in committees in the related engineering societies. 2. Expand my collaborations with the civil engineering school at OSU (e.g. with faculties in construction)	1. Begin participating on an ASCE computing committee 2. Begin collaborations with people and communities in the construction side.	1. Introduce [redacted] to the committees
Leadership and management skills	1. Assist with mentoring undergrad students in the geomatics group. 2. Increase leadership skills in overseeing a project 3. learn how to write and mange a grant budget	1. Mentor an undergrad student 2. Lead meetings and schedule activities for the collaborative papers and the Pactrans project 3. Help the mentor on budgeting of grants	1. Provide and encourage mentorship opportunities. 2. Include [redacted] in grant writing process 3. Give leadership roles to the postdoc and provide guidance and feedback
Responsible conduct of research	1. Become more familiar with the types of conflicts that arise at higher levels of academic research and instruction	1. Took the NSF CITI training course in Fall 2014 2. Review the chapter in the Howard Hughes "making the right moves"	1. Periodically discuss research ethical issues with the post-doc.