

Individual Development Plans (IDP): Radar Plot

(Modified from Dr. Heather E. Cannavan, Univ. of NM, 2014)

The following was developed based on a typical Ph.D. students' development by graduation. This is meant as an example and guidance. **You are encouraged to modify it to fit your needs and goals.**

Complete the Radar Plot based on the broader skillsets you aim to develop. Establish a clear set of criteria to assess progress. Create a new plot within pre-established increments (e.g., annually, each semester) to effectively evaluation progress towards your goals / skillset development.

FIRST, develop your areas for skill development and the associated criteria for evaluation.

Suggested Pie Wedges and associated criteria for evaluation

1. Oral presentation skills

a. Novice

- i. Contribute to presentations
- ii. Poster presentation

b. Intermediate

- i. Quals
- ii. Short Talks

c. Advanced

- i. Comps
- ii. Long – at minimum, 30 minutes talk

d. Expert

- i. Present long talk on a different topic than research such as a classroom lecture or science on tap

2. Written skills

a. Novice

- i. Write a novice NSF GRFP
- ii. Write abstract

b. Intermediate

- i. Make a poster
- ii. Write a paper/patent

c. Advanced

- i. Write paper/patents x 3
- ii. Write thesis/dissertation

d. Expert

- i. Apply for NIH training grant(s)

3. Safety

a. Novice

- i. MSDS
- ii. Online training modules (basics)

b. Intermediate

- i. Hazardous waste training
- ii. Grey Zone training

c. Advanced

- i. Equipment training
- ii. Specialized Safety Training

d. Expert

- i. Mentor undergraduate or other graduate students
- ii. Do a presentation on one topic in safety

4. Career and other Soft Skills

a. Novice

- i. Make a resume/CV
- ii. Participate in group activities
- iii. Accept responsibility for mistakes
- iv. Active listening skills
- v. Support of colleagues through participation of their recognition

b. Intermediate

- i. Update resume x4+ (specialized resumes)
- ii. Attend job fair
- iii. Go to career services
- iv. Appropriate handling of conflict when necessary
- v. Thoughtfully answer and defend your viewpoint in conflict

c. Advanced

- i. Nominate group members for award/ write recommendation letter
- ii. Attend job fair x4+
- iii. Mentor undergraduates & new students
- iv. Appropriate response to critique of work/behavior

d. Expert

- i. Mock interviews
- ii. Design your own experiments
- iii. Get a job!

5. Laboratory skills

a. Novice

- i. Technical equipment/skills training
- ii. Write protocol for technical equipment/procedure
- iii. Goniometer training
- iv. Prepare XPS samples
- v. Run plasma reactor

b. Intermediate

- i. Train group in equipment/skills
- ii. Attend AVS short course
- iii. Write Materials and Methods for first paper

c. Advanced

- i. Analyze Data gained from tests
- ii. Fix technical equipment

d. Expert

- i. Run Technical equipment alone
- ii. Write chapter 2 of dissertation/thesis
- iii. Propose and defend a new set of experiments based on your research successfully

6. Engineering Skills

a. Novice

- i. Learn basics of MatLab
- ii. Learn basics of Autocad/Makerbot
- iii. 3D print minion

b. Intermediate

- i. 3D print your own design

c. Advanced

- i. File design patent

d. Expert

- i. Make a prototype
- ii. Design future iteration of prototype

7. Supportive STEM Skills (e.g., Biology Skills)

a. Novice

- i. Write protocol for each cell type you're working with
- ii. Passage 1 cell line to 15 without contamination
- iii. Grow bacteria into isolated colonies

b. Intermediate

- i. Freeze/bring up cells
- ii. Work with multiple cell types
- iii. Perform a pop off experiment

c. Advanced

- i. Do confocal microscopy
- ii. Do large bacterial cultures without contamination
- iii. Work with multiple cell types at the same time without contamination

d. Expert

- i. Train an undergraduate
- ii. Perform assays such as XTT, live/dead

8. Ethics

a. Novice

- i. Grey Zone training
- ii. Intro Bias Training
- iii. Inclusivity Training

b. Intermediate

- i. Discuss case study
- ii. Research Practices/Ethics class
- iii. Unlearning bias training

c. Advanced

- i. Present on topic of choice in ethics
- ii. Attend ethics seminars(s)

d. Expert

- i. Negotiate Authorship

9. Skill of your choice as appropriate for your field

a. Novice

- i. [fill in the blank for assessment]

b. Intermediate

- i. [fill in the blank for assessment]

c. Advanced

- i. [fill in the blank for assessment]

d. Expert

- i. [fill in the blank for assessment]

SECOND, develop the VISUAL REPRESENTATION OF YOUR SKILLS as they currently stand.

Using the blank pie chart on the following page, create a visual representation of your current skills that you assessed in the previous pages. Each pie wedge should be a set of skills (e.g., one wedge is for oral presentation skills, another for ethics skills, etc.). The concentric circles represent which skill level you've reached: novice, intermediate, advanced, or expert. An example is provide on the final page of this document.

Over time in your program / academic or career journey, you should see your skill set improve, and the circles will become more filled in. **Keep in mind** that you don't have to achieve 100% expertise in all things prior to graduating / the end timeframe that is appropriate for your goal / degree / training. Instead, you should **be looking to improve your skills** as you go through your journey.

 = I'm confident at this point in time. I can do this.

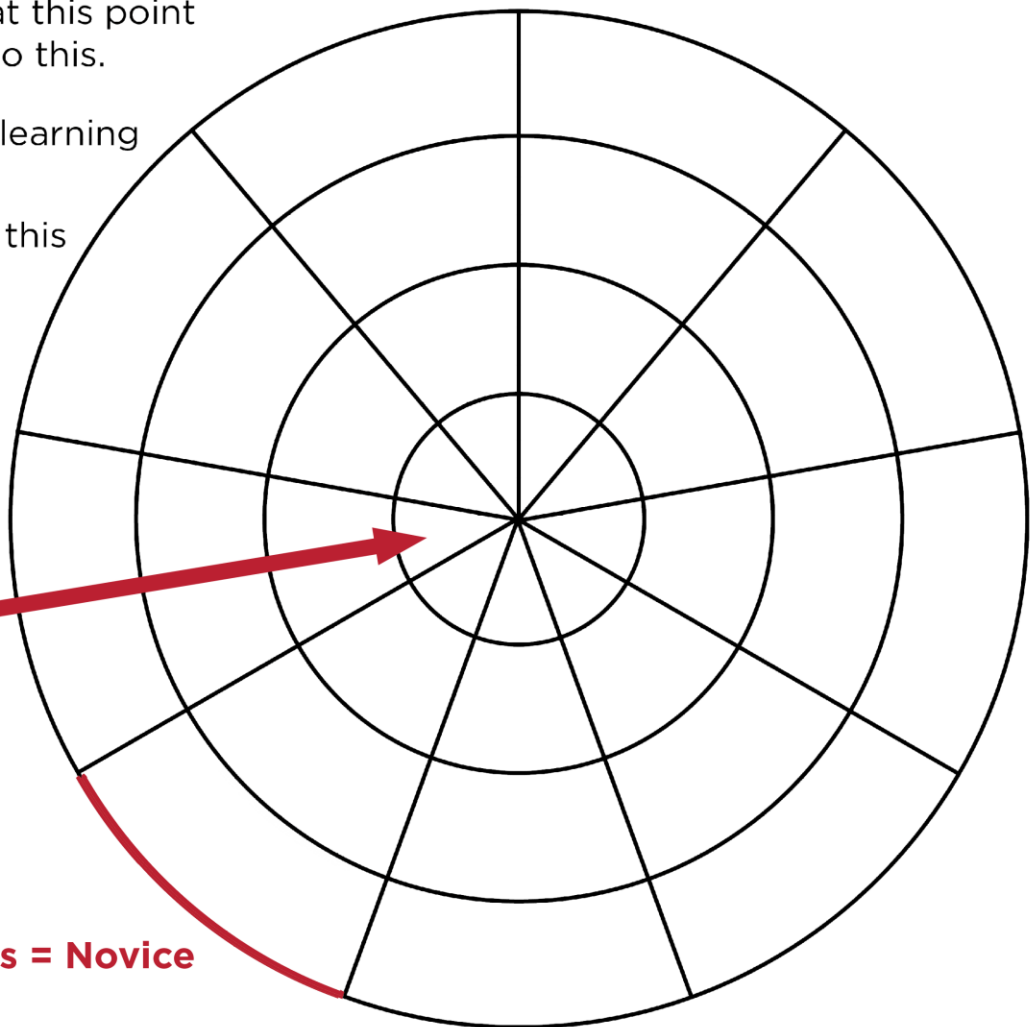
 = I'm rusty / I'm learning

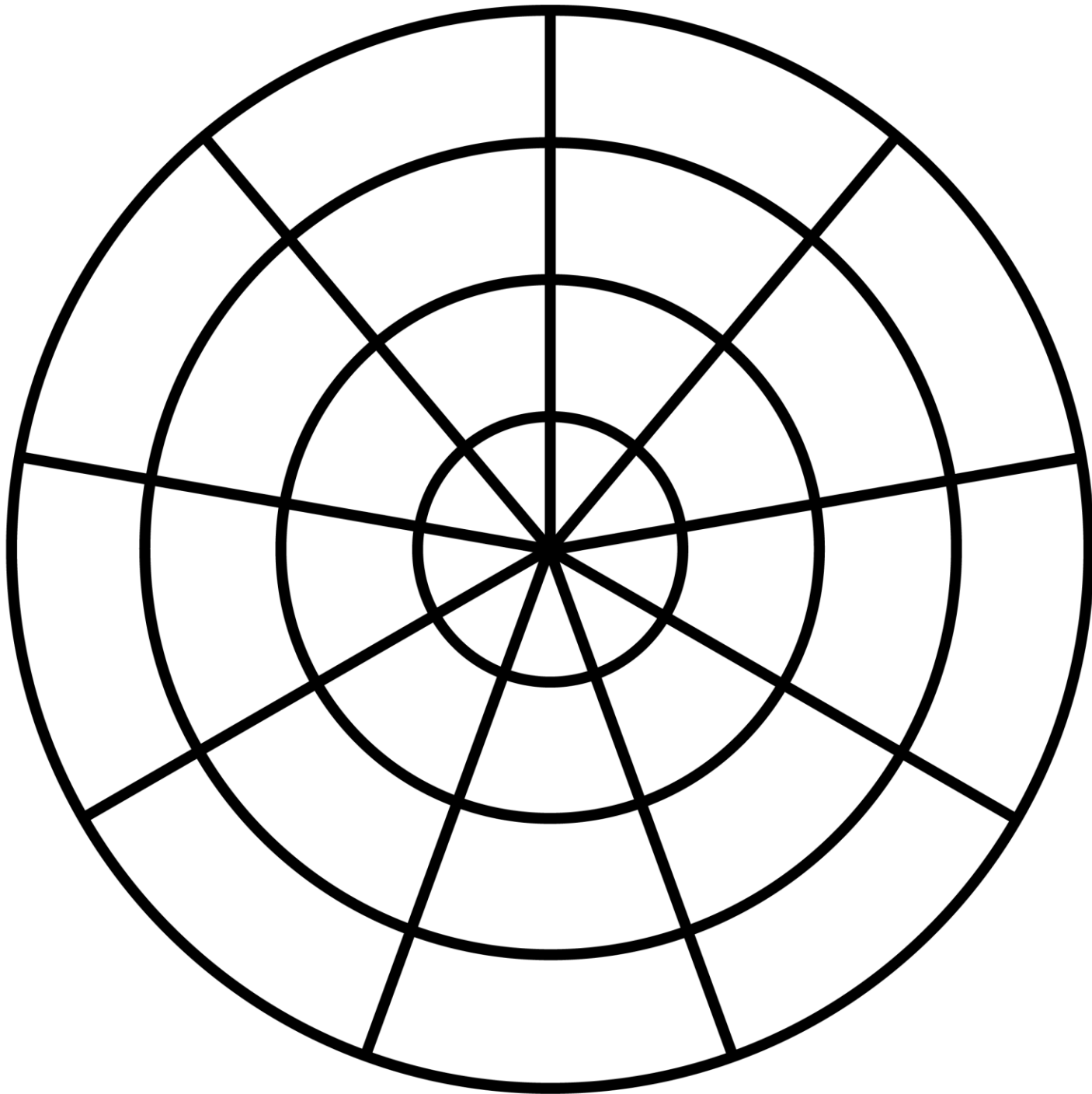
 = I haven't done this

Each pie wedge is a skill

Center = Expert

Outer Rings = Novice





 = I'm confident at this point in time. I can do this.

 = I'm rusty / I'm learning

 = I haven't done this

Related STEM Skills
(e.g., Biology,
Chemistry, Physics)

Engineering Skills

Remember
Inner = Expert
Outer = Novice

