Collaborative Learning Spaces at RCC

(A collaboration between Katie Chamberlain, Student, and Courtney Rasmussen, IR Analyst.)

> *RCC 2017-2020 Strategic Plan, Objective 3: Create collaborative learning spaces that connect students to other students, faculty, staff, and local employers. These are spaces where students can learn together, with college faculty and staff, or with local employers.*

LITERATURE REVIEW AND INTRODUCTION

The primary function of collaborative learning is to improve student comprehension of classroom material. Interaction and discussion with fellow learners reinforces the concepts students are trying to learn, and helps them remember information longer and understand it better (Kezar 2005; Shimazoe and Aldrich 2010). This collaborative approach has been shown to increase students' grades and overall graduation rates (Chen 2015; Price and Tovar 2014; Springer, Stanne and Donovan 1997).

In addition to improving students' grades and graduation rates, collaborative learning also improves students' interpersonal and analytical skills. Students who engage in learning groups tend to demonstrate a better ability to problem-solve and perform higher-order thinking (Springer et al. 1997). The leaders of these groups gain a refined sense of self-esteem and other group members tend to finish projects with a sense of accomplishment (Shimazoe and Aldrich 2010). In addition, students in collaborative learning groups develop diverse perspectives and are shown to be more open-minded and accepting of their peers (Chen 2015). These attributes play an important role in a student's life on and off campus. Employers look for good interpersonal skills when hiring, and students who can work collaboratively will be better equipped for their future (Price and Tovar 2014).

The third objective of RCC's 2017-2020 strategic plan was designed to support collaborative learning at RCC by creating more spaces where this kind of learning could take place. In preparing for the 2019 seven-year accreditation self-study report, a tally of intentionally created, or *formal*, collaborative learning spaces was produced for the measurement of Objective 3. The purpose of this research is to document and catalog the existence of *informal* collaborative learning spaces, and learn from students what they look for in a collaborative learning space. Findings will be used to improve existing and future collaborative learning spaces and their utilization by students, faculty, staff, and local employers.

Operationalization of "Informal" and "Formal" Collaborative Learning Spaces

Based on the language used in Objective 3 of RCC's strategic plan, a collaborative learning space is a physical location in which students interact and learn with other students as well as faculty, staff, and local employers. These physical locations are "formal", or intentional, when they are created specifically for the purpose of collaborative learning. Examples of such spaces include tutoring centers, labs, study and meeting rooms, and libraries.

Informal collaborative learning spaces tend to be more social in nature, are not specifically designed to be learning spaces, but are commonly used by groups of students for this purpose anyway. Examples include cafeterias, building lobbies, and outside spaces with seating for multiple people. For this study, classrooms are counted as both formal (when a class is in session) and informal (when no class is in

session) because it is common for students to use them for group-work outside of class. Table 1 delineates the categorization of formal and informal collaborative learning spaces used in this study.

Table 1

Informal	Formal	Other
Classrooms – Out of Session	Classrooms – In Session	Offices
Lobbies	Study/Meeting Rooms	Bathrooms
Cafés/Cafeterias	Resource Centers	Storage Closets
Student Centers	Computer Labs	Kitchens
Hallways	Tutoring Centers	Staff/Employee Areas
Outside spaces	Libraries	Student Government Rooms

METHODOLOGY

Observation took place inside and outside of designated buildings on the Redwood, Riverside, and Table Rock campuses during March, 2019. IREP (Institutional Research Effectiveness and Planning) student workers and staff were responsible for the observation of Redwood and Table Rock campuses. Volunteers from the student government divided responsibility for the Riverside campus amongst themselves after a brief training from an IREP staff member (see Appendix A). Each campus was observed systematically between the hours of 10:00 am to 1:00 pm (all campuses), and 5:00 pm to 7:00 pm (TRC) when the greatest number of students were on campus.

Color-coded maps of each campus and its buildings were provided to observers. The colors designated whether a space should or shouldn't be observed and whether questions may be asked of students (see Table 2). When an observer saw groups of students that seemed to be working together in informal collaborative learning spaces (colored yellow), notes of time, place, location, number of students, etc. were recorded on a Note Form (Appendix B). After the notes form was completed, observers introduced themselves and asked if they could ask a few brief follow-up questions about what the groups were doing and their preferences for collaborative learning spaces, as shown in the Interview Schedule (see Appendix B). If there were many groups of students present, the observer choose two or three groups to interview. When groups of students were encountered in formal collaborative learning spaces (colored blue) only the Note Form was completed, except for in-session classes, which were not observed. Spaces that fell into the "Other" category (not colored) were not observed. At TRC, the Industrial wing (Diesel, CAD, and Construction Labs) and High Tech Center were not observed.

The campus and building maps were also used to indicate where groups of students were observed. Each group was represented by a unique number written in their location on the map. The number used to represent a group on the map was also entered on the Note Form in the "Location" cell.

Table 2

Notes and Questions (Informal)	Notes Only (Formal)	Do Not Observe (Other)
Classrooms – Out of Session		Classrooms – In Session
Lobbies	Study/Meeting Rooms	Bathrooms
Cafés/Cafeterias	Resource Centers	Storage Closets
Student Centers	Computer Labs	Kitchens
Hallways	Tutoring Centers	Staff/Employee Areas
Outside spaces	Libraries	Student Government Rooms

Limitations

Some changes in methodology occurred spontaneously during observation resulting in more, but inconsistently collected, data on formal groups. For example, when formal groups were being observed, they often asked what observers were doing, and a conversation ensued in which observers asked and recorded responses to follow-up questions. Because of the inconsistent nature of the data collected in follow-up questions to formal groups, this data should be taken at face value and not as a representation of all formal groups observed.

Only a single round of observations was conducted in most of the campus buildings. This presents several problems for the reliability of this study's findings. First, collaborative groups' locations, composition, and activities may be different at different times of the day or days of the week. Second, groups may be found in different areas at different times in the term. Third, student patterns of congregation may change from season to season, with students staying indoors when the weather is bad, and going outdoors more often when the weather is nice. As this study was conducted during the winter, it was very uncommon to find anyone outside.

Although many more collaborative learning spaces were able to be observed thanks to the help of student government volunteers, the use of these students also had some drawbacks. A few of the observation reports were unusable because of poor handwriting or incomplete information; locations were not noted on campus maps (though they were specified on note forms); and some observations were made on students who were working alone. Observations of solitary students, while useful in their own way, could not be used with the other findings because they were outside the scope of the study. In the future, a more complete orientation should be given to student volunteers in order to ensure that they understand the boundaries of the study and have some guidelines for accurately completing their reports.

Analysis

After the research was conducted, note forms from the different campuses were collected and entered into an Excel spreadsheet, with each report representing one row of data in the spreadsheet. Groups were divided into Formal and Informal categories and mean and standard deviation were calculated for the number of people in groups within each. Answers to follow-up questions were sorted into individual columns and similar answers were grouped into larger response category columns. For example, answers such as quiet, peaceful, and private were all condensed to form "Quiet." The same procedure was used with the column "Studying" where answers such as studying, studying for a test, homework, working on paper, working on essay, and doing assignments were grouped together.

On some occasions, part of a report was completely unintelligible due to poor handwriting. When this happened, the answer was left blank in the spreadsheet. Thus, some of the percentages have slight discrepancies because blank fields were left out of the total in that category. Two exceptions to this are the technology and food columns. If technology was present, observers would mark yes but, commonly, when no technology was present, observers left the section blank. Thus, when the information was put into the computer all blank spaces were considered to be a "No" in this section. This same principle was used with the food category. If the section was left blank is was assumed that no food was present.

The small number of observations and very brief timeframe of the study make drawing conclusions from the data difficult. Because of the limited nature of this study, the following findings apply only to the groups observed and should not be generalized to all collaborative learning groups at RCC.

FINDINGS

Observational Notes

Comparing data from the observational notes of formal and informal groups highlights the differences between the two types of collaborative learning spaces. Observational notes included the number of people in the group, where the group was located, whether food or technology was present, and how many group members were sitting or standing.

Number of people in groups.

A total of 34 collaborative learning groups were documented; 18 at Redwood, 13 at Riverside, and three at Table Rock Campus. Eighteen (53%) of the groups were found in formal collaborative learning spaces and 16 (47%) in informal collaborative learning spaces. The average number of people in all groups observed was 4 with a standard deviation of 2.0 (Table 3). When the average was calculated for formal and informal separately, formal groups were found to be slightly larger. Formal groups had an average of four people and informal groups had an average of three, with standard deviations of 2.5 and 1.4 respectively.

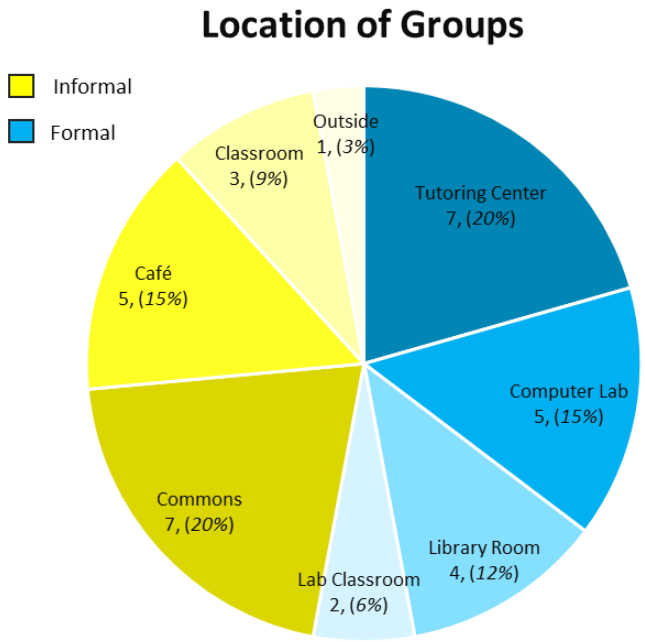
Table 3

Number of People in Groups		
	Mean	Std Dev
Formal	4	2.5
Informal	3	1.4
Combined	4	2.0

Location.

The locations recorded by observers were divided into eight categories; tutoring center, computer lab (including those in the library), library, lab classroom, commons, out of session classroom, café, and outside (Figure 1). Tutoring centers and commons had the most groups present in them (20% each) with the computer labs and cafes close behind (15% each). All of these spaces are large and designed for multiple groups to be present at one time, unlike the library study rooms, which are designed for individual groups.

Figure 1



While specific location categories were populated with more groups, the distribution of groups between formal and informal collaborative learning spaces was similar, with 53% of groups being formal and 47% informal. Heat maps of where groups were found are in Appendix C, with yellow dots representing groups in informal spaces and blue dots representing groups in formal spaces.

Technology, food, and seating.

Table 4

	Informal	n=16	Formal	n=18	All Groups	N=34
	#	%	#	%	#	%
Using Technology	6	38%	12	67%	18	53%
Eating Food	8	50%	4	22%	12	35%
All Members Sitting	11	69%	14	78%	25	74%
Members Standing ≥ 1	5	31%	4	22%	9	26%

Some form of technology (laptops, calculators, cellphones, etc.) was present in 53% of all groups, but was almost twice as common among formal groups (67%) than informal groups (38%) (Table 4). This is partly because computers are present in many formal collaborative learning environments such as tutoring centers and computer labs.

Half of informal groups (8) had some form of food or drink, compared to 22% of formal groups (4). Similar to the presence of technology in formal groups, the prevalence of cafes and proximity to food

vendors in informal spaces explains the higher number of informal groups with food. Another factor that may be contributing to the lower amount of food present in formal groups is that food is prohibited in some formal collaborative learning spaces, though two formal groups were observed with food, despite this prohibition. In total, 35% of all groups had some form of food.

All group members were sitting in 69% of informal groups, 78% of formal groups, and 74% of the all groups combined. Just over a quarter (26%) of all groups had members that were standing, with standing being a little more common among informal than formal groups (31% vs. 22%).

Follow-up Questions

Because follow-up questions were only consistently asked of informal groups, percentages for this section are only reported for informal groups. Some informal groups had multiple responses to questions, so percentages are duplicative and do not total 100%.

Group activities and composition.

When informal groups were asked about their activities, their answer typically (94% of the time) fell into one of three categories. Either they were studying, waiting for class, or eating (one group said that they were practicing calisthenics). Table 5 shows that studying was the most common activity, mentioned by 63% of informal groups (10). Waiting for class and eating were both mentioned by 31% of groups (5). Most of the students who were eating were located in the RWC Student Center café. The great majority (88%) of informal groups were composed of only students, with just one having an instructor and one having an alumnus.

Table 5

Informal Activities		
	#	%
Studying	10	63%
Waiting for class	5	31%
Eating	5	31%

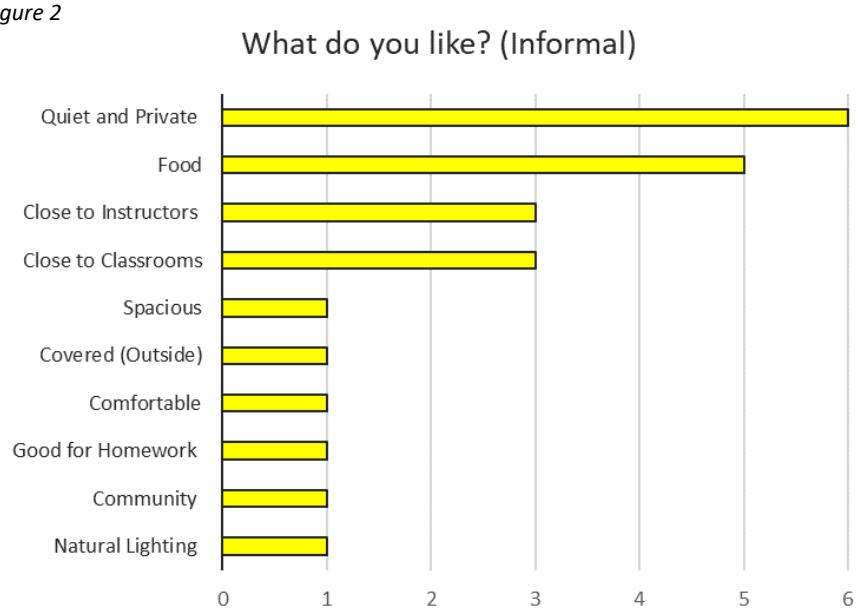
Of the nine formal groups who were asked follow-up questions, eight said they were studying or working on assignments, and one was having a conversation with their instructor after class. Five groups included someone other than a student; two had instructors, two had tutors, and one had a student-worker. Even though answers were not collected from all of the formal groups observed, it is clear from this sample that it was more common for tutors and instructors to be present in formal collaborative learning spaces than informal ones.

Things students liked.

Figures 2 and 3 show the answers given by students in formal and informal settings when they were asked what they liked about the space. Because not all formal groups were asked, the two types of groups are discussed separately.

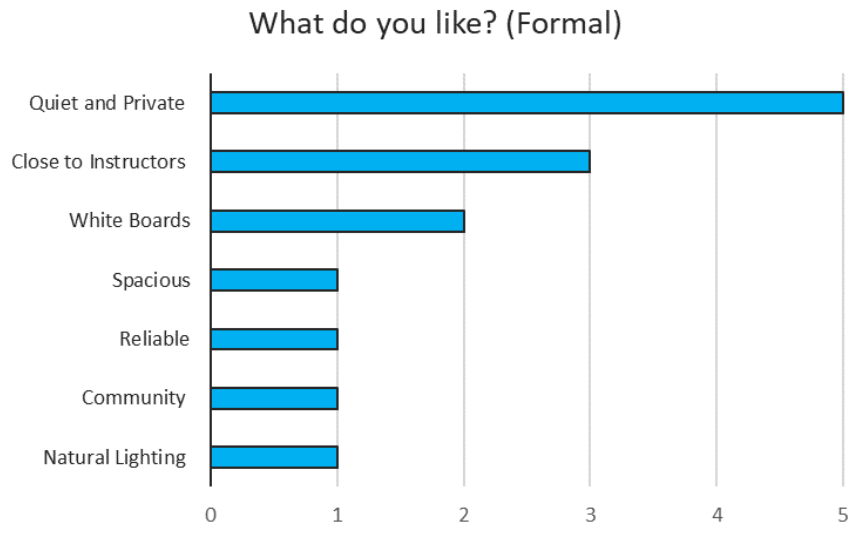
In informal spaces, students most commonly said they liked that the space was quiet and private (38% in out of session classrooms, HEC lobby, and G mezzanine), followed by the availability of food (31% in RWC café). Just under 20% mentioned that they liked either that the space was close to instructors (TRC commons and RWC program-specific classroom) or close to classrooms (HEC commons and outside RWC). Other comments mentioned by one group each were that the area was spacious (HEC commons), provided shelter from the rain (outside RWC), comfortable (G mezzanine), good for getting homework done (HEC commons), provided community (RWC café), and had natural lighting (HEC commons). It is noteworthy that the vast majority of responses to this question came from groups (both informal and formal) who were studying, with the exception of "food", which came from students who were eating in the RWC cafeteria.

Figure 2



Of the formal groups that were asked, five said that they liked that the space was quiet and didn't have a lot of people walking through it (RCC computer labs in Medford library, RWC library study room, RWC tutoring center, RWC GED study area), three liked that they were close to instructors (RWC tutoring center, electronics lab, RWC GED study area), two liked that there were whiteboards (HEC science lab, RWC library study room), and one group each liked that the space was spacious (HEC science lab), a stable and reliable place to study (GED study area), provided community (RWC GED study area), and had natural lighting (RCC computer lab in Medford library).

Figure 3



It's interesting to note the similarities between the responses of formal and informal groups. Quiet and private was the most common response category for both groups, with "Close to Instructors" also ranking among the top responses. Students in both types of spaces said that they liked having lots of space, community, and natural lighting.

Things that could be improved.

When groups were asked how the space could be improved (see Figures 4 and 5), answers were more varied, ranging from playing classical music to putting tile on the floor instead of carpet; however, a few interesting observations can be made. More food or snacks was the most common improvement requested across both groups; three informal (RVC G Mezzanine, TRC student commons, and RWC mechanics classroom) and two formal (RWC tutoring center and RWC GED study area). None of the other categories were mentioned by both formal and informal groups. Groups who commented on the need for more food were also groups who were studying. More comfortable chairs were requested by three informal groups located in the TRC and HEC commons.

Figure 5

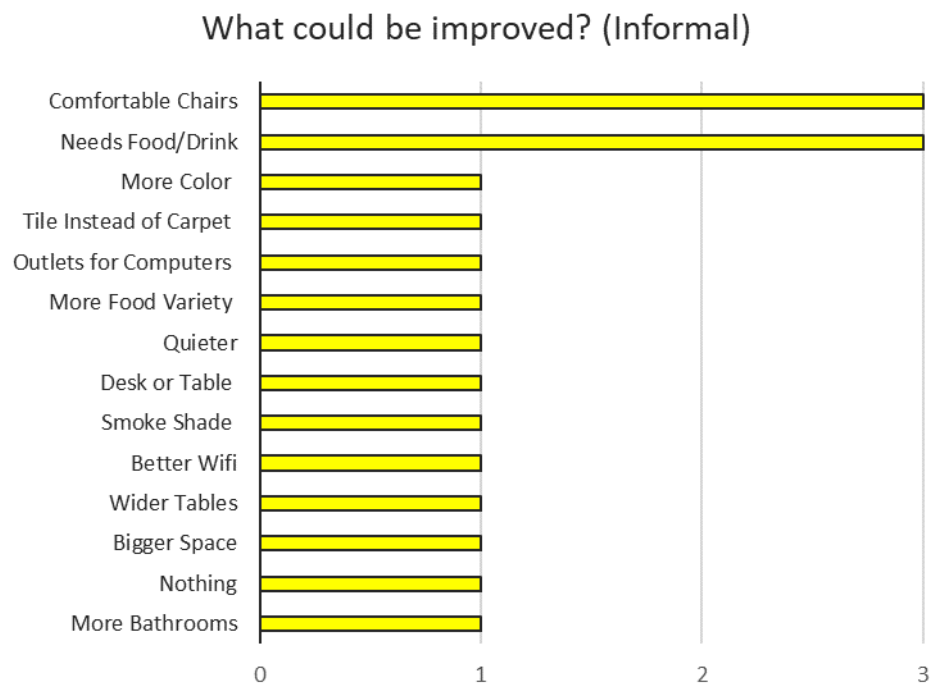
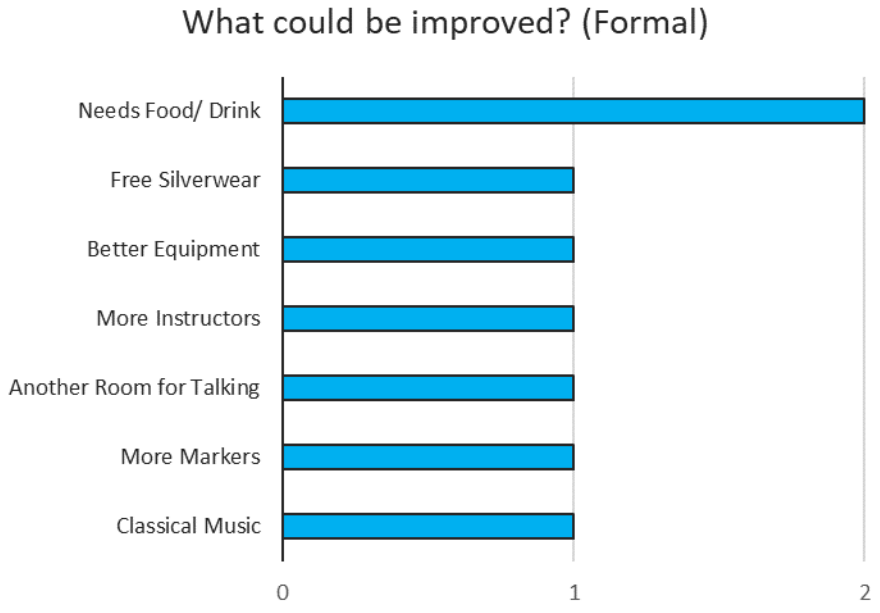


Figure 4



CONCLUSION

While this study represents a very limited sample of groups within formal and informal collaborative learning spaces, some clear themes have emerged from this analysis. Formal collaborative learning spaces provide more resources of technology and instruction. Informal collaborative learning spaces, because they are not designed for collaborative learning, do not provide technology or facilitate technology use, and sometimes do not have appropriate table space. Groups of students in both formal and informal collaborative learning spaces want more food. Students may be drawn equally to formal and informal spaces for different reasons. The areas most populated with collaborative learning groups are those that are centrally located; have large, open spaces; and plenty of tables and seating. Students may be drawn to thoroughfares because of their proximity to classes and instructors; however, students mentioned liking quiet, private spaces more times than they mentioned any other category.

APPENDIX A: INSTRUCTIONS

Instructions- Please read before conducting research

If space is formal (blue) or informal (yellow):

1. Fill in your name (as Observer) and the date and time of the observation in the appropriate cells of the **Notes Form**.
2. Mark the location of the group being observed with a unique number on the **map**. If the group is outside, use the campus map; if they are inside, use the building map. Enter the number used on the map in the location cell of the Notes Form for that specific group.
3. Draw the arrangement of the group and any tables or seating in the space provided. Use the symbols in the legend to indicate people, tables, and chairs.
4. Describe the group. Please indicate the following using the table provided:
    a. How many people are working together?
    b. Are students sitting or standing? If both, please indicate the amount of each.
    c. Are students using technology? Personal device or school/ lab computer?
    d. Is food involved?
5. If you feel that additional comments should be made about the group, use the "Additional Comments" space.

If informal (yellow), continue:

6. Use the script provided in the **Interview Schedule** to introduce yourself to the group (if there are many groups in the area, choose two or three groups to talk to) and explain the research project to the group. Ask if they would like to participate in the study by answering a few brief questions.

If yes:

7. Ask the questions provided in the Interview Schedule. Write notes on the group's answers in the spaces after each question.

APPENDIX B: NOTE FORMS

Observer:	**Date:**	**Time:**	**Location:**
Legend: X - Person O - Table ☐ - Chair			
# of People:	**Sitting:**	**Standing:**	**Technology:**	**Food:**
Additional Notes:				

Interview Schedule for Informal Spaces

My name is [RESEARCHER'S NAME] and I am [a member of RCC's student government]. I'm helping our Institutional Research office learn more about where students get together to work or study with other students, faculty, staff, or local employers. It's really important that we hear from students directly - could I ask you a few questions about what you are doing today and how we could improve this space for group work?

1. Are you all RCC students? Are there any instructors, RCC staff, employers, or community members present?

2. What are you doing/working on right now? (Studying? Hanging out? Eating lunch together? Waiting for class?)

3. What do you like about this space?

4. What would you suggest to make it better?

Notes Forms for Formal Spaces:

Observer:	Date:	Time:	Location:

Legend:
X - Person
O - Table
☐ - Chair

# of People:	Sitting:	Standing:	Technology:	Food:

Additional Notes:

Observer:	Date:	Time:	Location:

Legend:
X - Person
O - Table
☐ - Chair

# of People:	Sitting:	Standing:	Technology:	Food:

Additional Notes:

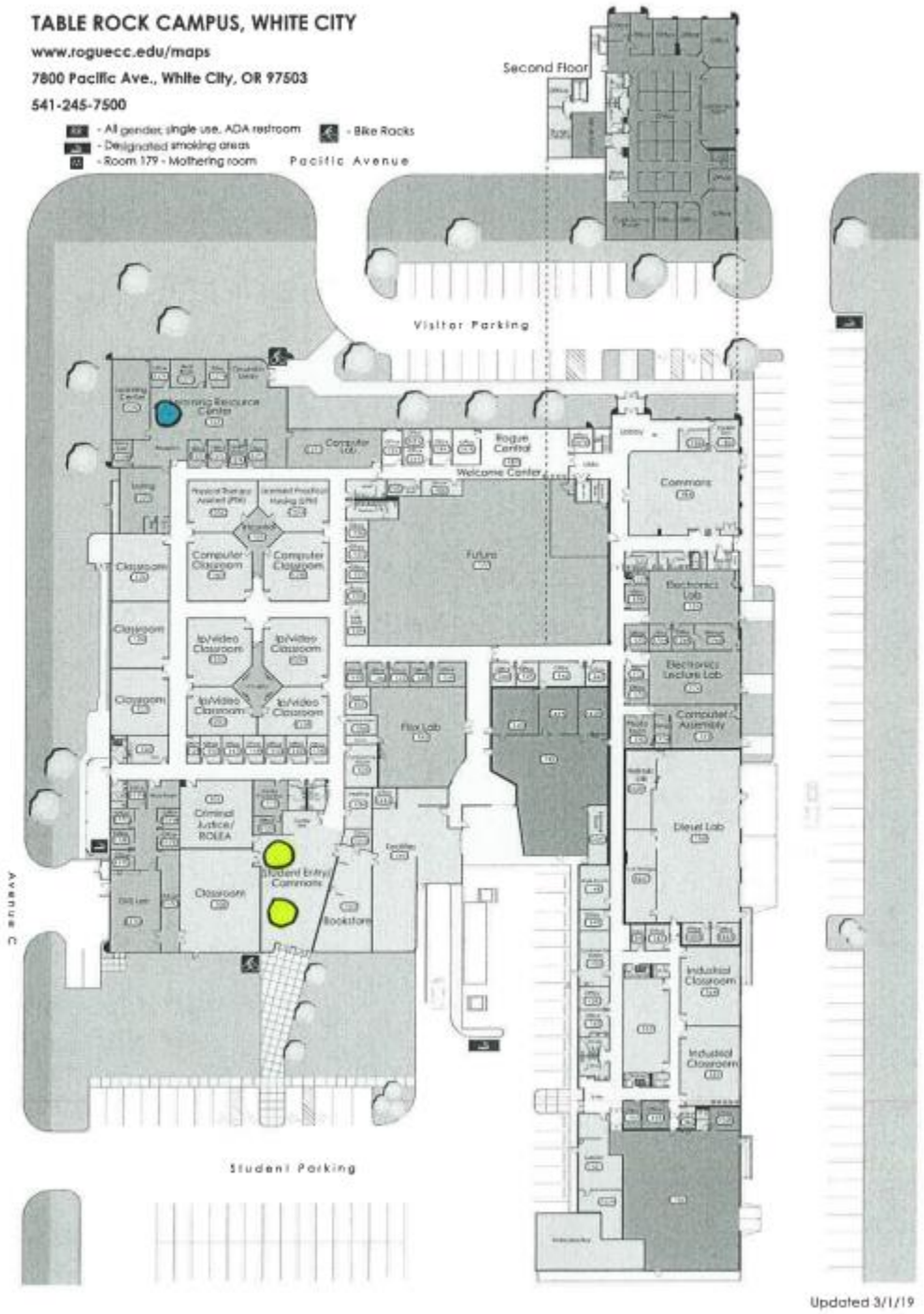
Observer:	Date:	Time:	Location:

Legend:
X - Person
O - Table
☐ - Chair

# of People:	Sitting:	Standing:	Technology:	Food:

Additional Notes:

APPENDIX C: HEAT MAPS



REDWOOD CAMPUS, GRANTS PASS

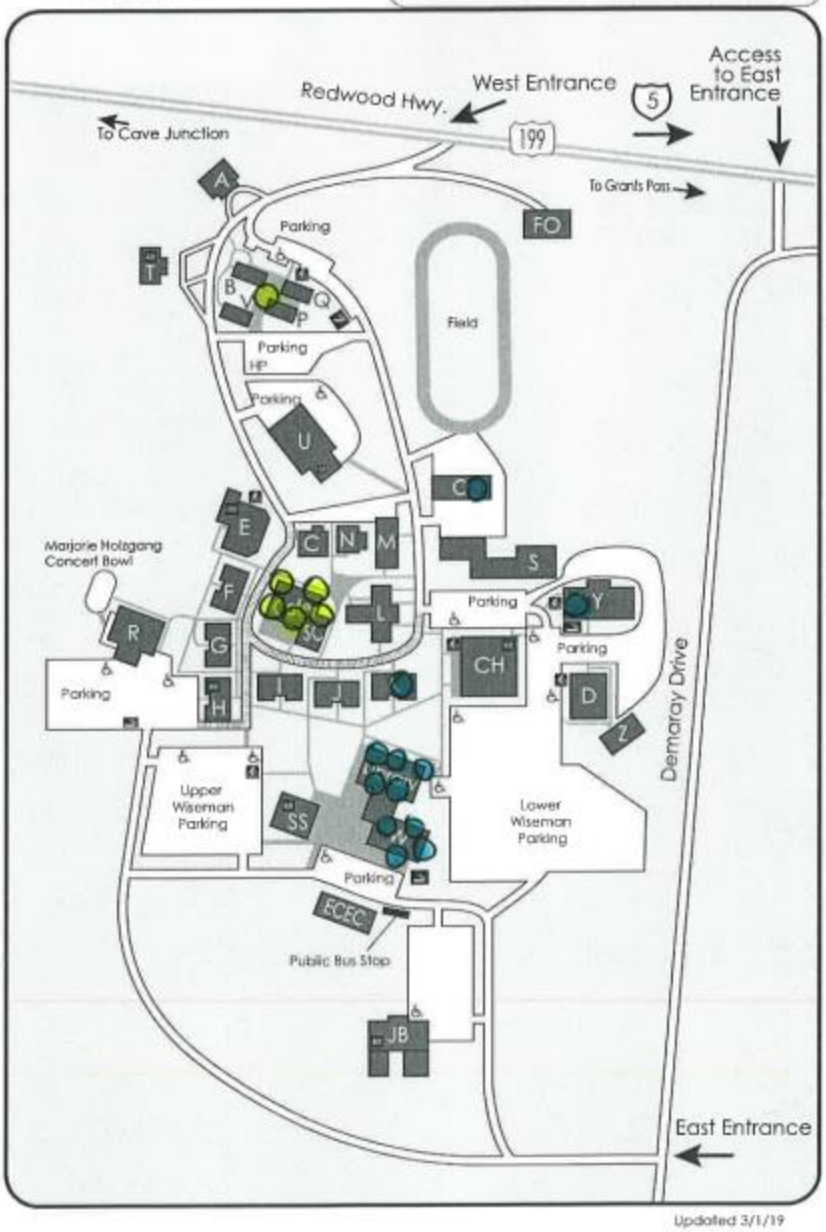
www.roguecc.edu/Maps

3345 Redwood Highway, Grants Pass, OR 97527 • 541-956-7500

Redwood Campus Legend

- A APPLEGATE
  - Continuing Education
  - Workforce Development
- B BUTTEN
  - Nursing
- C CHETCO
  - College Services
  - Information Technology
- CH COATES HALL
  - Computer Science/Labs/Classrooms
  - Help Desk
  - Instructional Media
- D DESCHUTES
  - Art Classrooms and Jewelry
- E ELK
  - Science Classrooms/Labs
- ECEC EARLY CHILDHOOD EDUCATION CENTER
- F FERRIS
  - Faculty Offices
- FO FACILITIES AND OPERATIONS OFFICE
- G GRONDE RONDE
  - Classrooms
- H HOOD
  - Board Room
  - Foundation Offices
  - Marketing
  - President's Office
  - Institutional Research
- I ILLINOIS
  - Classrooms
- J JOHN DAY
  - Classrooms
- JB JOSEPHINE BUILDING
  - Contracts and Procurement
  - Placement Testing
  - University Transfer - TRIO SSS
- K KLAMATH
  - Adult Basic Skills - ABE/GED®/ELA
  - Offices and Learning Center
- L LOOKING GLASS
  - Administration Offices
  - Career and Student Employment Services
  - Instructional Services
  - TRIO ROC
  - Veteran Services
- M McKENZIE
  - Budget and Finance
  - Human Resources
  - Massage Therapy
- N NEHALEM
  - Bookstore
  - Shipping/Receiving
- O OWYHEE
  - Facilities Maintenance Shop
- P PISTOL
  - Classrooms
- Q QUOSATANA
  - Humanities Faculty Offices
- R ROGUE AUDITORIUM
- S SANTIAM
  - Automotive
  - Mechanical Tech Labs
- SC STUDENT CENTER
  - Student Government/Clubs and Advisor
  - Veterans Resource Center
- SS STUDENT SERVICES
  - Admissions
  - Counseling and Advising
  - Recruitment
  - Rogue Central
  - Cashier
  - Financial Aid
  - Registration
  - SCHOPE
  - Transfer Center
  - Welcome Center
- T TALATIN
  - Classrooms
- U UMPQUA
  - Gymnasium
  - M Mothering room
- V VANNOY
  - Conference room
- W WISEMAN
  - ABS Faculty offices
  - Disability Services
  - Academic Success Center
  - Library
  - Math Faculty Offices
  - Testing Center
  - Wiseman Art Gallery
- Y YAMHILL
  - Electronics
  - Welding
- Z ZIG ZAG
  - Classrooms

- Handicap Parking
- Designated Smoking Area
- RR All gender, single use, ADA Restrooms
- M Mothering Room
- Bike Racks
- Bike Lockers



Updated 3/1/19

RIVERSIDE CAMPUS, MEDFORD

Registration: 117 S. Central Ave. Medford, OR 97501 • 541-245-7500

A – 202 S. RIVERSIDE AVE.
- Art
- Allied Health Occupations
- Classrooms and Faculty Offices
- Dental Lab
- Nursing Simulation Lab
- Phlebotomy Lab
- SOHOPE

B – 227 E. 9th ST
- Bookstore
- Computer Labs
- Disability Services
- Facilities
- Help Desk
- Mothering Room
- Placement Testing
- Staff and Faculty Offices
- Shipping and Receiving

C – 130 E. 8th ST
- Athletics
- Classrooms
- Health/PE/Recreation
- Music and Theater Arts
- Rogue Performance Hall

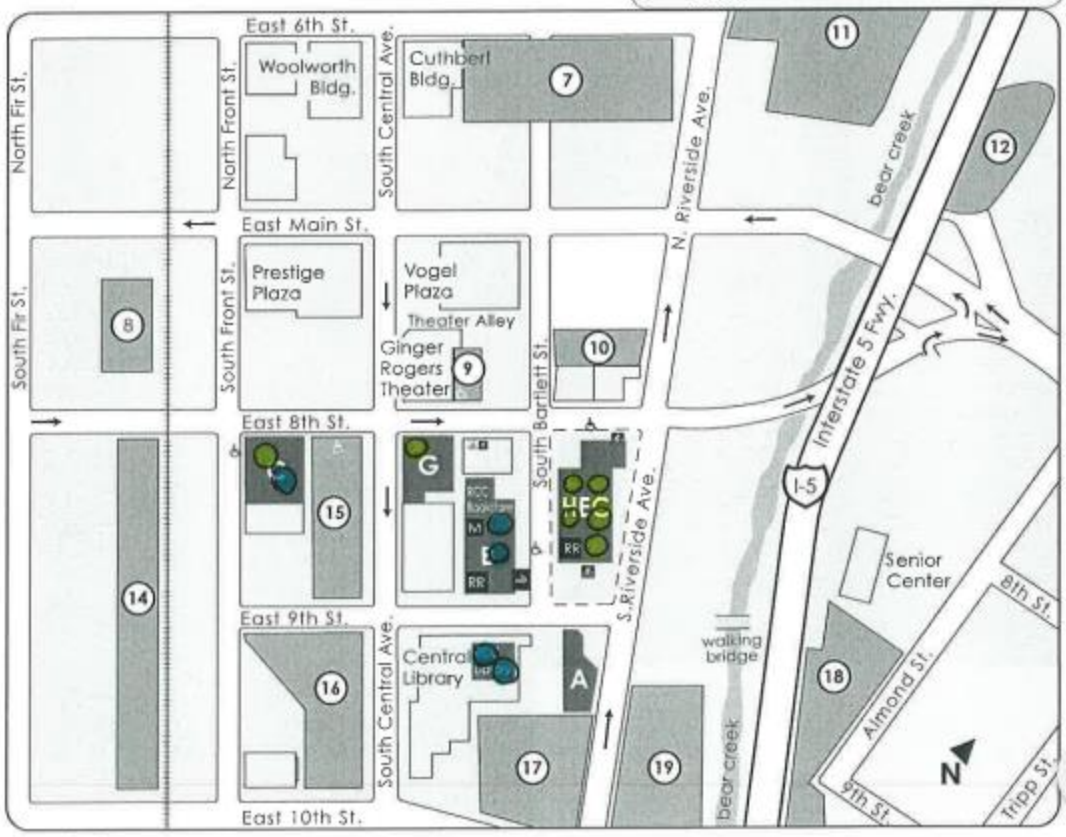
G – 117 S. CENTRAL
- Lower Floor
  - ABE/GED®/ESL classrooms
  - Academic Skills classrooms
  - Instructional Media
- Main Floor
  - ABS Faculty offices
  - Academic Skills Faculty Offices
  - Athletic Director
  - Academic Success Center
  - Security
  - Student Government/Clubs and Adviser
  - Student Lounge
  - Testing Center
  - Veterans Resource Center
  - Welcome Center
- Upper Floor
  - Administrative Offices
  - Career and Student Employment Services
  - Counseling and Advising
  - Human Resources
  - Recruitment
  - Rogue Central
- Cashier
- Financial Aid
- Registration
- Transfer Center
- TRiO ROC
- University Transfer TRiO/SSS
- Veteran Services

HEC – 101 S. BARTLETT ST.
RCC/SOU Higher Education Center
- Art
- Business Center
- Business, Computer Science
- Classrooms and Faculty Offices
- Computer Labs
- Early Childhood Education
- Human Services
- Humanities
- Mathematics
- Presentation Hall
- Science
- Social Science

LIBRARY 205 S. CENTRAL
RCC Library
- Computer Labs
- Language and Media Labs

From Interstate 5
From North, Exit 30 toward Medford/Crater Lake
Turn right onto Crater Lake Hwy./OR-62 W.
Turn slight left onto OR-99 S./Court St.
Court St. becomes Central Ave.
From South, Exit 27
Turn left onto Garfield.
Turn right onto S. Riverside Ave./OR-99 N.
Turn left onto E. Main St./Jacksonville Hwy.
Turn left onto S. Central Ave.

RCC Building
Designated Smoking Area
RR All gender, single use, ADA Restrooms
M Mothering Room
Bike Racks
Bike Lockers



Parking - **ADA parking**

7 - Middleford
8 - Evergreen
9 - Crolerian
10 - Bartlett South
11 - Riverside North
12 - Bear Creek North
14 - Evergreen South
15 - Central B
16 - Central A (Expanding)
17 - Riverside
18 - Bear Creek South
19 - Riverside South

*All parking adjacent to the campus is provided and monitored by Medford parking enforcement. Call 541-774-2082 for parking cost and permit information or visit http://www.ci.medford.or.us/Page.asp?NavID=3656

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updated

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