FOCUS

Career Development Workshop: How to Network

Presented by:
Females of Chemistry Uniting Scientists

Please Sign In:

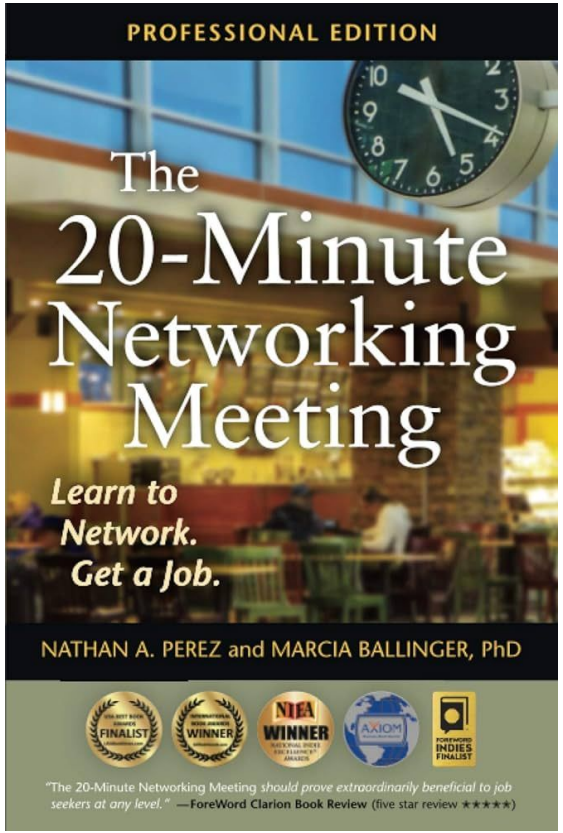
Presentation Overview

- 20 - Minute Networking Meeting
  - What is networking?
  - Why is it important
  - How to prepare yourself
  - 1 - Minute Elevator Pitch
- 3 - Minute Thesis

20 - Minute Networking Meeting

What is Networking?

- Definition: The art of building alliances that are mutually supported and beneficial to the parties involved
- Examples of networking:
  - Student organizations
  - Attending conferences
  - Interacting with invited speakers
- Everyday Examples:
  - Asking for recommendations from friends
  - Seeking information from faculty, advisors, alumni
  - Meeting new people from friends at lunch or class



Why is Networking Important?

- Hidden Job market
  - Many jobs are filled before they are even posted
  - ~70% of all jobs are awarded in the hidden job market
- Helps your resume get seen in a stack
- Can provide insight into a field or company you may be interested in
- Add a new contact in your network
- Gain you a potential advocate

20 - Minute Networking Guide Cheat Sheet

Step 1:	Great First Impression	2 -3 minutes
Step 2:	Great Overview	1 minute
Step 3:	Great Discussion	12-15 minutes
Step 4:	Great Ending	2 minutes
Step 5:	Great Follow-Up	After the meeting

Step 1: Great First Impression

Goal	To make a great first impression
How	With thanks and short chitchat
Time limit	2-3 minutes
What you will do	Arrive early, express gratitude, highlight connections, set the agenda

- The person you are meeting is going out of their way, their time is a gift so make sure acknowledge it
- Highlighting a mutual connection makes people feel more comfortable
- Setting the agenda will
  - Set the tone of the meeting
  - Set the impression you make
  - Show that you came prepared
  - Acknowledge that you are considerate of time
  - Show that you are unafraid to lead

Step 1: Great First Impression

Goal	To make a great first impression
How	With thanks and short chitchat
Time limit	2-3 minutes
What you will do	Arrive early, express gratitude, highlight connections, set the agenda

Hi Tessa I'm Anne Buck its very nice to meet you. Hannah Schorr asked me to send her regards. Hannah has been a great help to me, and she said you have been a huge help to her. Thank you again for meeting with me Tessa. I just need twenty minutes. I want to give you a brief overview of my background and ask a few questions that help in my job search.

Step 2: Great Overview “1 - Minute Elevator Pitch”

Goal	To give a great overview of your background
How	Provide a crisp, brief, and memorable understanding of your work and experience
Time limit	1 minute
What you will do	Briefly state your experience

- ❏ Though you may have been doing research for years the point of the overview is to give a general sense of what you’ve done
- ❏ Tally your years in your previous job
- ❏ Highlight your background
- ❏ Follow with where you’ve worked
- ❏ Ties those with most recent titles you’ve held
- ❏ Try to avoid jargon specific to the field, use more general terminology

Step 2: Great Overview “1 - Minute Elevator Pitch”

Goal	To give a great overview of your background
How	Provide a crisp, brief, and memorable understanding of your work and experience
Time limit	1 minute
What you will do	Briefly state your experience

Hi, my name is Anne Buck and I have been working in a chemistry/biochemistry laboratory setting for 8 years. My undergraduate research was focused on organic synthesis but after graduated I moved to a more biochemically focused lab at Wellesley college where I investigated the efficacy of antimicrobial peptides. Currently, I’m a fifth-year chemistry PhD candidate at The Ohio State University whose research background is in high throughput assay development and enzyme kinetics mainly used to evaluate treatments for organophosphorus exposures. I have developed a robust assay that allows for the screening of 92 compounds as potential organophosphorus antidotes, vastly increasing the experimental scope by 4-fold. This assay has allowed me to examine over 400+ small molecules leading to the identification of top compounds which have been sent for animal testing. Through my research experiences I found my passion is figuring out if potential therapeutics work and how they work. This passion led to an internship at Entrada therapeutics on their platform development team. I’d like to find a research position in the biotech world where I can expand the application and understanding of life changing medicines.

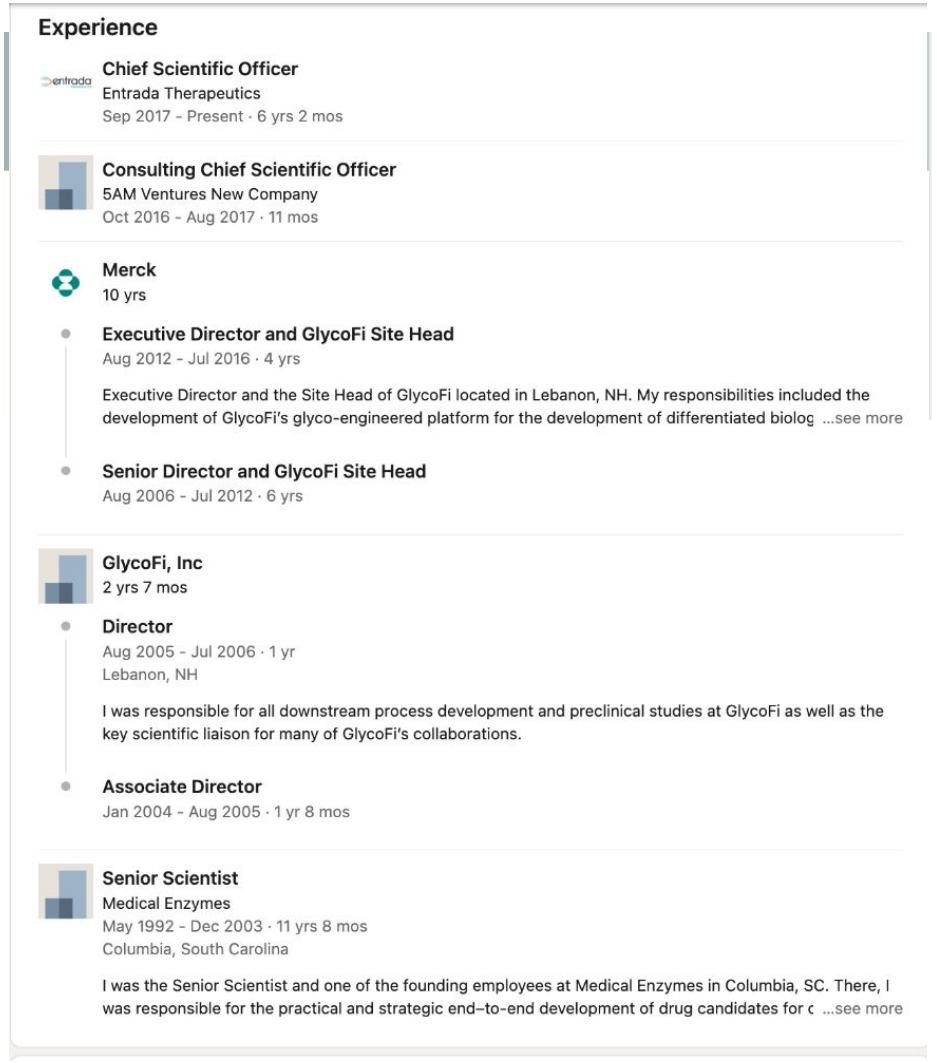
Step 3: Great Overview Discussion

Goal	Have a short but great discussion
Time limit	12-15 minutes
What you will do	Talk through 5 key questions. You will drag questions 1 - 3 yourself depending on the person. Question 4 and 5 are more standard

- Never ask for information you could readily find yourself aka the person's background (LinkedIn is a life saver!) or general knowledge things in your industry
- What information can this person uniquely be able to give you?
  - Fact about the contact followed by a related question

Step 3: Great Overview Discussion

- “What was the most useful skill gained from your postdoc, would you recommend postdocing even if a person’s ultimate career goal is going into industry?”
- “When looking at all the emerging fields of biotechnology, how do you assess which fields are the most likely to succeed through all potential setbacks?”
- “There are pros and cons to working at a large pharmaceutical company verses a smaller biotech, what lead you to make the change and would you ever think about going back to big pharma?”



Step 3: Great Overview Discussion

Goal	Have a short but great discussion
Time limit	12-15 minutes
What you will do	Talk through 5 key questions. You will drag questions 1 - 3 yourself depending on the person. Question 4 and 5 are more standard

- Question 4: Additional Contacts
  - “Is there anyone else you know from (whatever company or organization) that I might want to talk to as I network?”
- Question 5: How can I help you?
  - “You have been so helpful to me. How can I help you?”

Step 4: Great Ending

Goal	Make a great final impression
Time limit	2 minutes
What you will do	Review any action, express more gratitude, wrap it up

- ❏ End the discussion by saying
  - ❏ “That’s all I have to ask. Thank you again, Tessa, for your time. I’m grateful for your thoughts.”
- ❏ Follow up on any actions, if they suggested someone else to talk to make sure to mention you will reach out to them
- ❏ Thank them again for
  - ❏ Their expertise
  - ❏ Their time
  - ❏ Their wisdom
  - ❏ Their suggestions
  - ❏ Their willingness to help

Step 5: Great Follow-Up

Goal	Follow up after the meeting
Time limit	varies
What you will do	Take prompt action to follow up after the meeting

- Send a thank you note to the direct contact
  - “Thank you for taking time out of your day to meet with me. (Talk about something specific in the conversation like advice given) Hope we will meet again soon. In the meantime, please let me know if there is anything I can do for you.”
- Send a thank you to the person you gave you that contact’s information
- Connecting on LinkedIn with a message is a good way to say thank you if its an impromptu networking like meeting a speaker

3 - Minute Thesis

3 - Minute Thesis, what is it?

A competition some schools or conferences run where a student has three minutes to talk about their thesis research with exactly 1 powerpoint slide.

General Overview

- **Introduction:**
  - Introduce yourself at the start
  - Capture the audience's attention at the start with the motivation behind why your work is important - why do we care?
- **Body (your research)**
  - Provide context/background of your research.
  - Keep the messages simple.
  - Articulate the significance of your research for society.
  - Use examples that the audience will relate to.
  - Don't get too technical, but highlight the things you achieved
- **Conclusion**
  - Return to your introduction to close your talk.
  - End on a high note.
  - Thank the audience!
  - Remember to keep it under 3 minutes or you will be eliminated from the competition – practice!

Presentation Slide

- **Less is more!**
- **Background**
  - Leave white space
  - Don’t overcrowd the screen
  - Be creative
- **Images and Figures**
  - Use high quality
  - Simple graphics to convey important information
- **Text**
  - Min 24 font

- **Content**
  - Only relevant information that you directly refer to in your talk
  - Use text smartly
  - Include your name
  - Do not rely on your slide to convey information, it's a compliment to your talk
  - Personal touches allow to audience to better understand your research

Actual Presentation

- **Pacing**
  - Speak at a reasonable pace (150 words per minute)
  - Avoid ums and ahs
- **Silent pauses**
  - Use them to collect your thoughts
  - Appear confident and in control
  - Give audience time to process
  - Use them to emphasise a point or transition or for a rhetorical question
- **Body Language**
  - Confident stance, no fidgeting, smile and make eye contact
- **Have a clear outcome in mind**
  - Know what you want your audience to take away from your presentation
  - Try to leave your audience with an understanding of what you are doing, why it is important, and what you hope to achieve
- **Practice makes perfect!**

Chemical Conjugation for Detection and Differentiation of Glycans by Surface Enhanced Raman Spectroscopy

Hannah Schorr and Zachary D. Schultz

MOTIVATION

Glycoproteins were 11 of top 20 pharmaceuticals in 2013

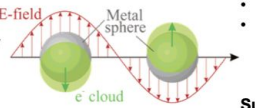
- 2nd highest grossing 2021

Analysis of sugars is difficult

- Isomeric structure makes differentiation a challenge

SERS

- Measures vibrational energies using scattered light
- Molecular specificity
- Rapid and sensitive
- Enhanced signals from metal nanostructures
- Orientation effects

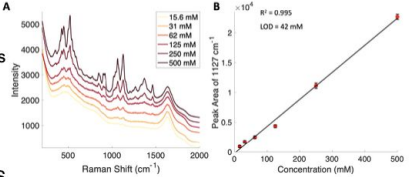


Spontaneous LOD of monosaccharides is high

- LOD = 42 mM
- Physiological concentrations of sugars from a protein is pM-nM

Sugars have low attraction to metallic surfaces

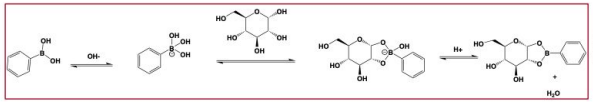
- Need to overcome for SERS

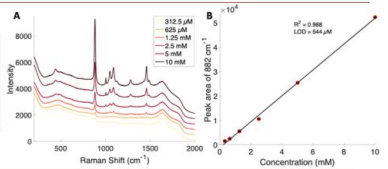


METHODS AND RESULTS

Conjugation with Phenylboronate (PBA)

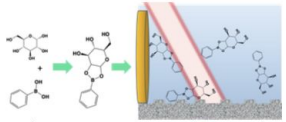
- Only occurs at basic pH
- Conjugates to cis-diols
- Gives molecules larger Raman scattering cross section
- Leads to lower spontaneous LOD = 544 µM

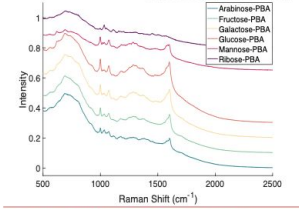




SERS Detection in Flow

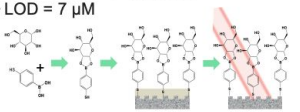
- PBA Sugar conjugates can be detected and differentiated when flowed over a planar substrate
- LOD = 28 µM

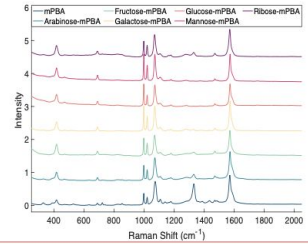




Static SERS detection

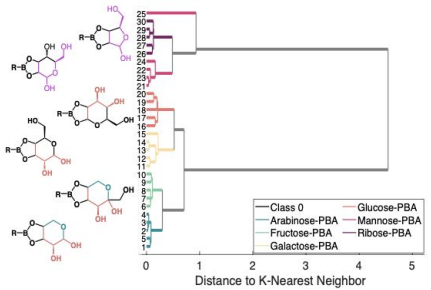
- 4-mercaptophenylboronic acid used to fix sugars to planar substrate
- LOD = 7 µM





Spectral Differentiation

- K-nearest neighbor Heirarchical Cluster Analysis based on 2 component Principal Component Analysis
- Cluster branches form based on preserved structural moieties



Spontaneous Bare	Spontaneous Conjugated	SERS in Flow	Static SERS
42 mM	544 µM	28 µM	7.6 µM

ACKNOWLEDGEMENTS

- The Ohio State University, specifically Dr. Zachary Schultz and our group
- Funding from NIH

Coblentz Society

The Ohio State University

Schultz Research Group The Ohio State University

NIH National Institute of General Medical Sciences

REFERENCES

1. Walsh, G. Biopharmaceutical benchmarks 2014. *Nat. Biotechnol.* **2014**, *32*, 992.
2. P. H. Arboleda and G. R. Loppnow, *Anal Chem*, 2000, **72**, 2093-2098
3. G. Springsteen and B. Wang, *Tetrahedron*, 2002, **58**, 5291-5300.
4. K. Kur-Kowalska, M. Przybyt and E. Miller, *Biotechnology and Food Sciences*, 2014, **78 (2)**, 101-110.
5. M. Sanda, L. Morrison and R. Goldman, *Analytical Chemistry*, 2021, **93**, 2003-2009.