## Kayla R. Tinker (Flynn)

Kayla.Tinker@noaa.gov | USA Citizenship | Selective Service N/A (female)

### **One Page Overview**

**EDUCATION Google Scholar** 

University of Connecticut, Avery Point, CT, May 2016

M.Sc Oceanography | Coastal Physical Oceanography

Lyndon State College, Lyndon, VT, May 2014

**B.Sc Atmospheric Science & B.A Applied Mathematics** 

#### **EMPLOYMENT**

**Github** 

**2020 – present** Department of Commerce | NOAA | National Weather Service



2018 - present Johns Hopkins University | Center for Talented Youth CTY

Feb 1 2018 - present Online Mathematics Instructor

**2019 - 2020** Lyndon State College AKA Northern Vermont University

Aug 15 2019 - Jun 15 2020 Mathematics Adjunct

2016 - 2017 Trinnovim | National Aeronautics and Space Administration GISS

May 1 2016 - Jul 5 2017 Scientific Programmer

2014 - 2016 University of Connecticut | Storrs & Avery Point

[2] May 20 2015 - May 1 2016 Graduate Research Assistant

[1] Sep 4 2014 - May 20 2015 **Teaching Assistant** 

2010 - 2014 Lyndon State College AKA Northern Vermont University



[5] Sep 3 2012 - May 25 2014
 [4] Sep 3 2012 - May 25 2014
 Mathematics Tutor

[3] May 1 2013 - May 25 2014 Undergraduate Research Assistant

[2] Jan 9 2013 - May 25 2014 Undergraduate Research Assistant

2012 University of Rhode Island | Bay Campus

Jun 1 2012 - Aug 6 2012 Undergraduate Research Experience

2011 - 2012 Vermont Institute of Applied Meteorology VIAM

Sep 1 2011 - Dec 18 2012 Weather Forecaster

#### **EDUCATION**

**Google Scholar** 

# University of Connecticut, Avery Point, CT, May 2016 M.Sc Oceanography | Coastal Physical Oceanography

Advisor Melanie Fewings Committee Members James Edson & Kelly Lombardo Understanding Regional Wind Forcings and Surface Heat Fluxes that cause Sea-Surface Temperature Anomalies during U.S. West Coast Wind Relaxations

**Publication [2]** *Flynn, K. R.*, Fewings, M. R., Gotschalk, C., and Lombardo, K. (2017). Large scale anomalies in sea-surface temperature and air-sea fluxes during wind relaxation events off the United States West Coast in Summer. *J. Geophys. Res. Oceans*, 122, 2574-2594, doi:10.1002/2016JC012613

**Poster Presentation** | 2016 American Geophysical Union Ocean Sciences Meeting, New Orleans, LA | *Understanding Regional Wind Forcings and Surface Heat Fluxes that cause Sea-Surface Temperature Anomalies during U.S. West Coast Wind Relaxations* 

**Relevant Coursework** 3 Air-Sea Interaction *A* | 3 Atmospheric Dynamics *A* | 9 Thesis *A* \*25+ credits in physical sciences/dynamics | GPA 3.5/4.0

★ National Science Foundation Fellowship | Honorable Mention 2015

## Lyndon State College, Lyndon, VT, May 2014 B.Sc Atmospheric Science & B.A Applied Mathematics

Advisors Jason Shafer & Kevin Farrell (Retired)

Measuring Techniques of Ocean Wave Heights in the North Atlantic

Relevant Coursework 3 GIS Applications in ATM A | 3 Numerical Weather

Prediction A | 3 FORTRAN A | 3 Differential Equations A- | 8 Physics I & II A |

6 Atmospheric Dynamics I & II A- \*Additional coursework in transcripts | GPA 3.5/4.0

★ Awards Outstanding Female Student-Athlete (Individually named 2013 & 2014), Arthur B. Elliott Honor Society 2014, Albert J. Oullette Award: Outstanding senior in mathematics 2014, Sigma Zeta National Mathematics and Science Honor Society

#### **EMPLOYMENT**

**Github** 

### 2020-Present Department of Commerce | NOAA | National Weather Service

[4] Meteorologist Sea Ice Analyst {ICE} | Oct 9 2022 - present

Weather Forecast Office Anchorage, AK **{AFC}**| Noelle Runyan GS-1340-12 \$93,367 per yr | Full-time 40+ hrs/week | 6930 Sand Lake Road **Duties** (in addition to [1], [2], & [3])

- Local expert in sea ice and sea surface temperature analysis
- Forecast & provide consultation services to the users of products & services
- Develop & evaluated new techniques for analysis, forecasting & in the delivery of services
- Provide impact based decision support to a variety of deep core partners and stakeholders

### **Skills Gained / Improved**

Software development, code documentation, software testing, public speaking, science communication, forecast verification, scientific writing, ArcGIS, statistics, leadership skills, followership skills, Python, Javascript

### **Accomplishments listed below**

[3] Meteorologist Sea Ice Analyst {ICE} | Mar 27 2022 - Oct 9 2022

Weather Forecast Office Anchorage, AK **{AFC}**| Noelle Runyan GS-1340-11 \$74,317 per yr | Full-time 40+ hrs/week | 6930 Sand Lake Road **Duties** {in addition to [1] & [2]}

- Local expert in sea ice and sea surface temperature analysis
- Forecast & provide consultation awareness to the users of products & services
- Develop new techniques for analysis, forecasting & in the delivery of services
- Provide impact based decision support to a variety of deep core partners and stakeholders

#### Skills Gained / Improved

software development, code documentation, software testing, public speaking, science communication, forecast verification, scientific writing, ArcMap, statistics, leadership skills, followership skills

#### **Accomplishments listed below**

[2] Meteorologist Forecaster {AJK} | Sep 14 2021 - Sep 26 2022

Weather Forecast Office Juneau, AK | Jeff Garmon

GS-1340-11 \$72,299 per yr | Full-time 40+ hrs/week | 8500 Mendenhall Loop

- ★ Award Time off 8 hours Feb 2022 | Alaska Region employee of the month **Duties** {in addition to [1]}
  - Assess current forecast weather situations

- Conducting a weather watch using state of the art meteorological, hydrologic, and climate data
- Devising warnings, advisories, outlooks and general forecasts for weather hazards
- Supporting interpretive services, such as decision support services to partners

### **Skills Gained / Improved**

software development, documentation writing, software testing, google scripting (javascript), data analysis, summary writing, public speaking, science communication, GFE Mapping. teamwork, winter analysis, shift management, team creation, leadership, followership skills, subversion, git, AWIPS

### Accomplishments listed below

### [1] Meteorologist Forecaster (AJK) | Sep 14 2020 - Sep 14 2021

Weather Forecast Office Juneau, AK | Jeff Garmon GS-1340-9 \$57,756 per yr | Full-time 40+ hrs/week | 8500 Mendenhall Loop

- ★ Award \$1,400 September 2021 | For office culture moral boosting Duties
  - Forecast weather, water, and climate hazards
  - Produce & communicate life saving impact based warnings, advisories, & outlooks
  - Provide initial review of data to ensure accuracy, precision, and timeliness
  - Support the development, production and delivery of interpretive services
  - Provide impact based decision support services that include tailored products, specialized notifications, remote briefings, and on site deployments to a set of core partners that share a role in public safety and protection of property
  - Collect, assess, analyze, and integrate a complete set of meteorological, hydrological, and climatic data in order to provide forecasts of critical elements at global, synoptic, and increasingly finer mesoscale levels
  - Apply expertise, with occasional assistance, in the theory of weather, water, and climate sciences including providing current knowledge of scientific and technological developments and delivering science based and technology based solutions to operational challenges
  - Assist in the collaboration and co-creation with colleagues while leveraging the talents of others to improve and optimize the day to day operational functions of weather forecasting offices
  - Use state of the art hydrometeorological data to monitor a geographic area and assist in the preparation and issuance of warnings, advisories, outlooks or general forecasts for weather, water, or climate hazards

### Skills Gained / Improved

GFE, python, teamwork, collaboration, google script (javascript), ArcGIS online, GIS survey, GIS storymap, writing how to documentation, data gathering, storm analysis, climate summary writing, data analysis, leadership

skills, communication skills, public speaking, science communication, working high impact events, AWIPS

### **Accomplishments listed below**

### NWS | ACCOMPLISHMENTS

2021 - current LANTERN (Leveraging Abilities, Needs, Talents, Energies, and Resources Network) The goal of this project is to enhance collaboration between weather forecast offices and the Weather Prediction Center (WPC) in pursuit of consistent and accurate Winter Storm Watches.

- → Project is actively used operations
- → Team of three created GFE python 3 code in vlab developed scientific computer application software to improve serviced in an operational meteorological environment
- → Created **documentation** for user installation and use
- → Create two how-to videos: GFE and Hazard Services versions
- → Distributed code to 18 weather forecasting offices for testing
- → Hosted 3 tabletop collaborative exercises Developed & facilitated necessary training to operational forecasters
- → **Team** of three managed code by removing bugs
- → Implemented code in winter hazard services using the cloud for testing
- → NWS Insider article about the team
- 2021 2024 ABIDE (Alaska Region Belongingness, Inclusion, Diversity, and EEO BIDE) The goal of this group is to increase office morale, improve office culture, and focus on alaska region recruitment and retention
  - → Find a full list of accomplishments for 2022 here
  - → Find a full list of accomplishments for 2021 here
  - → Chair (May 2022 current), previous Co-chair (Feb 2021 May 2022)
  - → Improved leadership skills by creating agendas and helping creating goals to accomplish each year.
  - → Was asked to attend the Regional Labor Council (RLC) as Subject Matter Expert (SME) from ABIDE

#### 2021 - current **Development of New Techniques**

- → ICE | Schedule change proposed and implemented
  - Allows us to add another employee busy days that occur 1x/week
- → ICE | ArcPy Script used to create a text file of zones that overlap sea ice
  - o Scripts runs in 30s, which saves staff from human error
  - Script also updates the time stamps
- → ICE | **Python** Script for automation
  - Created two scripts to save analysts 30+ minutes of time daily
  - Scripts pull down RCM and Sentinel imagery
- → ICE | ArcGIS Awareness <u>Dashboard</u>
  - One stop shop for many of the website tabs our team uses daily

- → ICE | January 2023 | Sea Ice Verification
  - o Documentation on "How well does ASIPs 5-day forecast verify in comparison to the analysis?"
  - o Initiated, planned, coordinated, and oversaw the transfer of this scientific technique from research to operational environment
  - Presentation | 103rd AMS 13th Conference on Transition of Research to Operations
  - Python Script for analyzing past and present dates. Saved me months worth of manual work.
- → Regional | ArcGIS storymap template for Potential Alaska Region Zone Changes
  - Used for the visualization of potential zone changes and then communicated with the public and partners
  - o 2,844 views as of 8/20/2022
- → AJK | Member of the Winter Storm Assessment Team The goal of this project was to analyze how the previous winter went and how to make improvements for the 2021-2022 winter season
  - o Implemented a shift change in fall 2021 to add a shift that focuses on public communication and the mid-range forecast
  - o The office received numerous positive public feedback about the improvement noticed in the forecast
- → AJK | Created the upcoming potential hazards votes map
  - o Utilizes **GIS survey form** to create a map that displays which hazards each forecaster thinks may occur and their confidence level
  - o Improved **communication** for impactful events amongst staff
  - Created a how to one-pager
- → AJK | Created a Coworker anonymous feedback form
  - o Results are utilized by supervisors holding annual review sessions and for presenting awards throughout the year
  - Script created using javascript within google sheets
- → AJK | Co-analysed data points within **GFE** to determine changing the point and click from marine or land to dual point, which includes both wave height and snow total
- → AJK | Created a one click update for hazard graphics
  - Used for watches/warnings/advisories
  - o Reduces manual edits and human errors
  - Completed by using weather.gov api & javascript
- → AJK | Created a one click monthly & annual climate report
  - o Pulls xmacis data in google sheets
  - Completed using javascript
- → AJK | Adjusted our **AWIPS** database to include the new climate normals

#### 2021 - current Case Studies

→ ICE | August 2022 | Sea Ice in the Bering Sea in August

- o Unusual event of sea ice pack moving 125 nm into the Bering Sea
- o Invited to present at Alaska Center for Climate Assessment & Policy
- o 172 views as of 10/24/2022
- → AJK | Created a storm analysis of the Taku River Flooding Event
  - o This historical event changed the flooding threshold for the Taku
  - o 327 views as of 8/20/2022

#### 2021 - current Recruitment & Retention

- → AR | NOAA Alaska Region Recruitment Video participant
- → National | January 2023 | "About the National Weather Service" storymap
  - o Tool for explaining different offices for recruitment & education
  - o For 5-12 meteorology openings to view different offices
  - o 00 views as of 9/20/2022
- → ICE | October 2022 | "About the Sea Ice Program" storymap
  - o Tool for explaining program for recruitment & education
  - o 00 views as of 8/20/2022
- → AJK | Co-created the 'Office Recruitment' storymap and official template
  - o Template has been used by 15+ offices nationwide
  - Enhances recruitment
  - Each storymap is currently being linked with appropriate USAJob openings
  - o 00 views as of 9/20/2022

#### 2020 - current Training, Exercises, & Office Visits

- → ICE | Oil Spill Exercise + briefing
- → ICE | Rick Spinrad Visit
- → ICE | Alaska Native Governance & Protocols Training

### 2020 - current Media, Public Outreach, & News

- → ICE | Unknown Object military search
- → ICE | NESDIS Support Daily
- → ICE | April 2022 current | 3x/week sea ice update for KNOM & KDLG
- → AJK | KINY January 2022 climate interview
- → AJK | New Year's Eve Storm 2022 media: KTOO, Juneau Empire, Taku105
- → AJK | December 2020 | climate discussion with KINY
- → AJK | October 2020 | Tailored Haines Briefings during Landslide
- → AJK | Multiple forecast interviews with KHNS example
- → AJK | Archived KFSK variety of interviews related to weather and climate
- → AJK | Co-wrote & reviewed the monthly and annual climate for four data sites

#### 2020 - current Leadership Activities

- → DOC | Women in STEM | Recruitment co-lead 2022
- → NWS | Leadership Excellent Development (LEAD) selected 2023 2024
- → NOAA | Mentee in the mentoring program 2022
- → NOAA | Women of NOAA member

- → AFC | Leadership Team member
- → AFC | Awards Team member
- → AFC & AJK | GIS Team member
- → AFC & AJK | Culture Team member
- → AJK | Formatter Team member
- → AJK | Marine Team member
- → AMS | Member

### 2018-Present Johns Hopkins University | Center for Talented Youth (CTY)

### Online Mathematics Instructor | Feb 1 2018 - present

Remote | Amanda Clayton

\$24 per hr | Part-time 5 - 10 hrs/week | CTY McAuley Hall 5801 Smith Ave, MD

#### **Duties**

- Monitor student progress and assist students in accomplishing established learning objectives
- Interacting independently with students using distance education technologies, primarily Moodle, Zoom, and email
- Providing detailed feedback on exams according to a rubric
- Assisting with the development of course related materials; updating and developing curriculum; participating in new course development; assisting with the training and supervision of other instructors
- Engage in solving real-world problems
- Completed the inclusive mindset training

#### Classes Taught

→ Chess, Honors Trigonometry, Honors Precalculus, AP Calculus AB, AP Calculus BC, Calculus C

#### Skills Gained / Improved

Remote communication, teaching, organization skills, Notion, LaTex

### **2019 - 2020** Lyndon State College AKA Northern Vermont University

### Mathematics Adjunct | Aug 1 2019 - Jun 1 2020

Lyndon Campus | Daniel Daley

\$3,600 per course | Part-time 10 hrs/week | 1001 College Rd VT

#### **Duties**

- Independently teach and grade assigned courses
- Create course content
- Conduct classes in a manner that promotes student success and incorporates various teaching styles and technology
- Work effectively with colleagues and students of various cultural and socioeconomic backgrounds

### Classes Taught

→ Statistics (Hybrid), Basic Algebra

### **Skills Gained / Improved**

Teaching, organization skills, remote communication, covid adaption

### 2016 - 2017 Trinnovim | National Aeronautics and Space Administration (NASA)

### Scientific Programmer | May 1 2016 - Jul 6 2017

Goddard Institute for Space Studies (GISS) | Anastasia Romanou

\$68,000 per yr | Full-time 40 hrs/week | 2880 Broadway, NY

#### **Duties**

- Assist in biogeochemical climate-related model development
- Analyze and deliver scientific data
- Work closely with scientists to maintain and increase the scope of their research
- Examine data in Labrador Sea Water, which is sensitive to air-sea exchanges and local atmospheric events

### Accomplishments

- → Created new scripts in matlab, python, NCO, and perl
- → Produced interactive high quality graphics combined with easy-to-use analysis tools for custom data products
- → Poster 2018 American Geophysical Union Ocean Sciences Meetings on Labrador Sea Water formation and its relationship to buoyancy forcing

#### Skills Gained / Improved

Model development, Python, FORTRAN, Pearl, NCO, Unix, Linux, collaboration

### 2014 - 2016 University of Connecticut

### [2] Graduate Research Assistant | May 2015 - May 2016

Avery Point Campus | Melanie Fewings

\$27,000 per yr | Part-time 10 hrs/week | 1084 Shennecossett Rd CT

#### **Duties**

• Utilize mathematical and statistical approaches to analyze MODIS sea surface temperature data

#### **Accomplishments**

- → Created a library of sea surface temperature images by pulling data from the physical oceanography distributed active archive center MODIS website using Matlab
- → Concluded that during the time frames we needed the data, during wind relaxations, it was too cloudy

#### Skills Gained / Improved

Matlab, data scraping, working independently

### [1] Teaching Assistant | Sep 2014 - May 2015

Avery Point Campus | Melanie Fewings

\$27,000 per yr | Part-time 10 hrs/week | 1084 Shennecossett Rd CT

- ★ Award Acknowledged from UCONN as a Teaching Assistant who excelled Duties
  - Independently teach and grade assigned courses
  - Conduct classes in a manner that promotes student success and incorporates various teaching styles and technology
  - Work effectively with colleagues and students of various cultural and socioeconomic backgrounds

### Classes Taught

→ Coastal Systems II with Lab, Introduction to Oceanography Lab

### **Skills Gained / Improved**

Teaching, setting up labs, grading work, clear communication skills

### **2010 - 2014** Lyndon State College AKA Northern Vermont University

[5] Supplemental Instructor | Sep 3 2012 - May 25 2014

Lyndon Campus | Kevin Farrell (Retired)

\$15 per hr | Part-time 10 hrs/week | 1001 College Rd VT

#### **Duties**

- Attend all classes in which you were tutoring
- Help improve student performance and retention in historically difficult courses
- Individually taught select Calculus and Statistics classes

#### **Classes Tutored**

→ Intermediate Algebra, Statistics, Precalculus, Calculus I, Calculus II

#### **Skills Gained / Improved**

Teaching and tutoring, personal mathematics skills, communication

### [4] Mathematics Tutor | Sep 3 2012 - May 25 2014

Lyndon Campus | Kevin Farrell (Retired)

\$15 per hr | Part-time 10 hrs/week | 1001 College Rd VT

#### **Duties**

- Integrate effective study and learning strategies
- Refer students to other appropriate college resources
- Help answer mathematics questions from a variety of courses

#### Classes Tutored

→ Intermediate Algebra, Statistics, Precalculus, Calculus I, Calculus II

### **Skills Gained / Improved**

Teaching and tutoring, personal mathematics skills, communication

### [3] Undergraduate Research Assistant | May 1 2013 - May 25 2014

Lyndon Campus | Nolan Atkins

\$18 per hr | Part-time 20 hrs/week | 1001 College Rd VT

- ★ Award 1st Place Student Poster | 94th AMS | 13th Student Conference Duties
  - Conduct field work near Norman, Oklahoma in May 2013
  - Analyze potential storms that occur during that time frame by using photography, videography, photogrammetry, radar analysis, and ArcGIS

### **Accomplishments**

- → Field Work | VORTEX (Verification of Origins of Rotation in Tornadoes Experiment) 2
- → During field work, the team witnessed a number or tornadoes and tornado damage, with the primary tornado for research purposes being the May 20 2013 EF 5 Moore OK tornado
- → Communicated with local storm chasers to gain copies of their photos/videos to help analyze the Moore tornado
- → Analyzed the tornado to reveal details on the relationship between the damage path, visual, and radar detected characteristics of the tornado
- → Finalized work was published, presented, and a website was created
- → Publication [1] Atkins, N. T., K. M. Butler, K. R. Flynn, and R. M. Wakimoto, 2014: An integrated damage, visual, and radar analysis of the 2013 Moore, Oklahoma, EF5 tornado. Bull. Amer. Meteor. Soc., 95, 1549-1561, doi:10.1175/BAMS-D-14-00033.1
- → Poster presentation | 94th AMS | Special Symposium on Severe Local Storms, Atlanta, GA | An integrated damage, visual, and radar analysis of the 2013 Moore, Oklahoma, EF5 tornado
- → Oral and Poster Presentation | 39th Annual Northeastern Storm Conference | An integrated damage, visual, and radar analysis of the 2013 Moore, Oklahoma, EF5 tornado

### Skills Gained / Improved

Matlab, ArcGIS, tornado radar analysis, tornado damage analysis, photogrammetry, science communication, public speaking, data collection, website building

### [2] Undergraduate Research Assistant | Jan 9 2013 - May 25 2014

Lyndon Campus | James Bozeman (retired) \$15 per hr | Part-time 5 - 10 hrs/week | 1001 College Rd VT

#### **Duties**

Mathematically analyze legislative districts using Matlab

### Accomplishments

→ Co-authored a research paper on approximating the convexity ratio of legislative districts, found the convexity ratio of all of the federal

legislative districts in Illinois, North Carolina, and Texas using Adobe Illustrator and Matlab

### Skills Gained / Improved

Matlab, mathematical writing skills, adobe illustrator

### [1] Undergraduate Research Assistant | Sep 5 2012 - Dec 18 2012

Lyndon Campus | Nolan Atkins

\$15 per hr | Part-time 3 - 5 hrs/week | 1001 College Rd VT

#### **Duties**

Analyze wind data at Lyndon State College

### Accomplishments

- → Created wind roses and histograms using Matlab based on five years of wind data collected from Lyndon State college
- → Presented results to the public during an open information meeting pertaining to the possible sites of a central wood-chip fire heating plant on campus

### **Skills Gained / Improved**

Matlab, wind analysis, public speaking, science communication

### 2012 University of Rhode Island | Bay Campus

### Undergraduate Research Experience | Jun 1 2012 - Aug 1 2012

Graduate School of Oceanography (GSO) | John Merrill (retired)

\$6000 per summer + housing | Full-time 40 hrs/week | 215 S Ferry Rd RI

#### **Duties**

- Complete a national science foundation funded summer undergraduate research experience (SURFO) in physical oceanography by analyzing data and presenting findings at the end of the summer
- Wind profiles are important for siting energy-producing wind turbines

### **Accomplishments**

- → Learned about coastal surface winds and analyzed in situ vertical wind data from the local profiler using Matlab
- → Presented information to sailors at America's Cup World Series about SODAR (sonic wind profiler), which measures wind speeds and wind turbulence at varying heights above the surface.
- → Wrote a technical report and presented findings to the URI bay campus on my summer research project "Analysis of Coastal Surface Winds"

#### **Skills Gained / Improved**

Matlab, wind analysis, SODAR, public speaking, science writing

### 2011 - 2012 Vermont Institute of Applied Meteorology VIAM

Weather Forecaster | Sep 1 2011 - Dec 18 2012

Lyndon State College | Jason Shafer

\$12 per hr | Part-time 3 - 6 hrs/week | 1001 College Rd, Lyndonville, VT

#### **Duties**

- Provide valuable weather information to decision-makers in Vermont
- Work as a team with other meteorologists
- Create short-term forecasts with a focus on winter weather
- Support the Vermont Agency of Transportation
- Engage in solving real-world problems

### Accomplishments

→ Had opportunities in highly accountable situations where I was required to conduct research, create my own weather forecast, and communicate with clients

### **Skills Gained / Improved**

Winter weather forecasting, problem solving, teamwork, communication