Virginia Space Grant Consortium

Pre-College Diversity Inclusion Meeting
August 31, 2021
ODU Peninsula Center: Room 2248

NASA Definitions

- **Underrepresented:** Populations that are not present in the STEM professions relative to the size of the population at large. Refers to racial and ethnic populations as well as women and persons with disabilities.
- **Underrepresented Minority:** Refers to persons from racial and ethnic groups whose enrollment in STEM education or participation in STEM professions is much smaller than that group's representation in the general population. African Americans, Hispanics/Latinos, and Native Americans and Pacific Islanders currently fit this definition.
- **Underserved:** Often used interchangeably with "underrepresented," particularly as it relates to the sciences and engineering. Specifically, it is used to promote access and opportunity to persons of diverse backgrounds—racial, ethnic, gender, religious, age, sexual orientation, disabled, and other populations with limited access—to decent and affordable housing, gainful employment, and other services. In the STEM arena, "underserved" has typically referred to women and persons with disabilities.

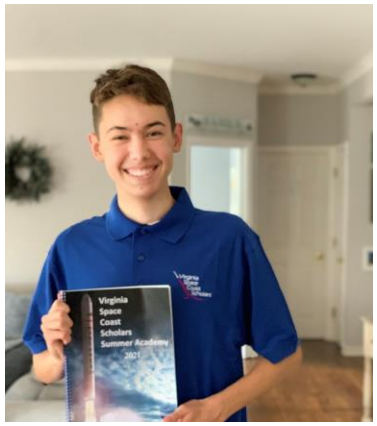
Virginia Space Coast Scholars

Launchpad to Study the Earth, the Atmosphere and Beyond

Virginia Space Coast Scholars

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Participants	141	254	315	350	329	310	318	386	375
Males (%)	63%	63%	60%	56%	57%	53%	56%	56%	50%
Females (%)	37%	37%	40%	44%	43%	47%	44%	44%	50%
Underrepresented Minorities (%)	32%	14%	18%	17%	18%	18%	17%	17%	22%

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Summer Participants	40	90	88	120	120	119	119	123	128
Males (%)	60%	54%	47%	53%	50%	54%	53%	53%	48%
Females (%)	40%	46%	53%	47%	50%	46%	47%	47%	52%
Underrepresented Minorities (%)	23%	11%	16%	14%	11%	8%	10%	11%	7%

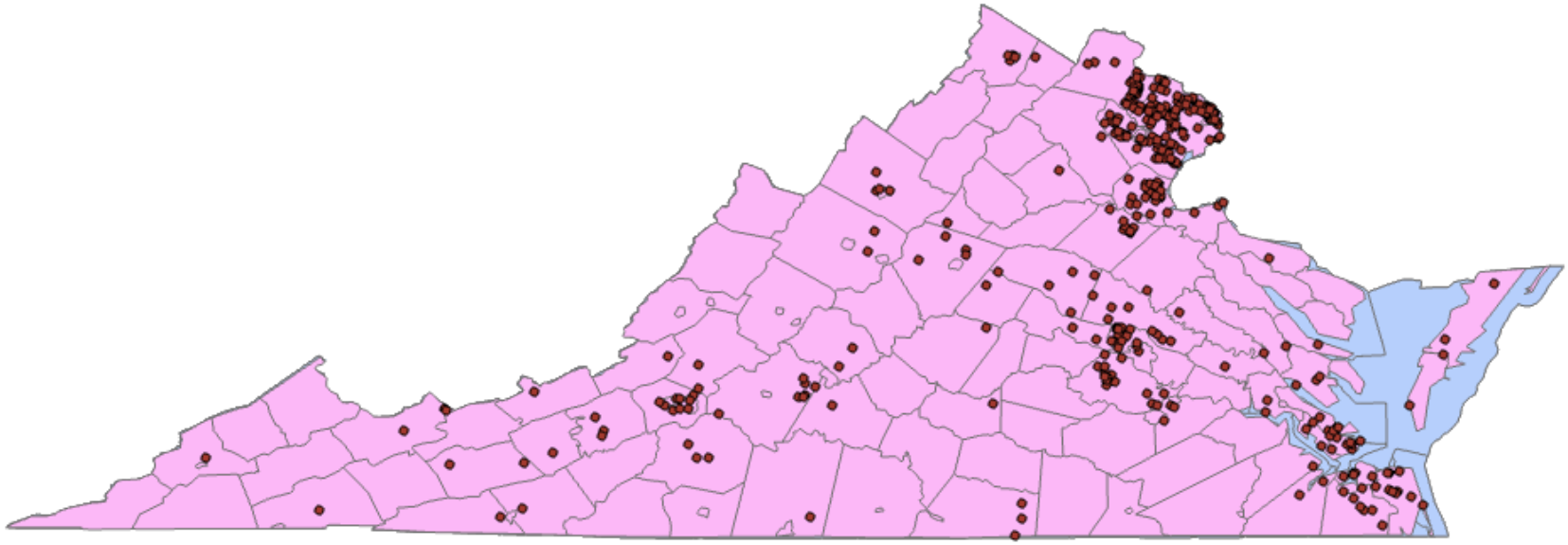


**2021 131 students became inactive or withdrew
39% were minorities
105 were considered inactive 34% were minorities

Virginia Space Coast Scholars

Launchpad to Study the Earth, the Atmosphere and Beyond

VSCS 2021 Participants



BLAST

Building Leaders for Advancing Science and Technology

www.blast.spacegrant.org

"...through BLAST I let out many ideas I didn't know I had."

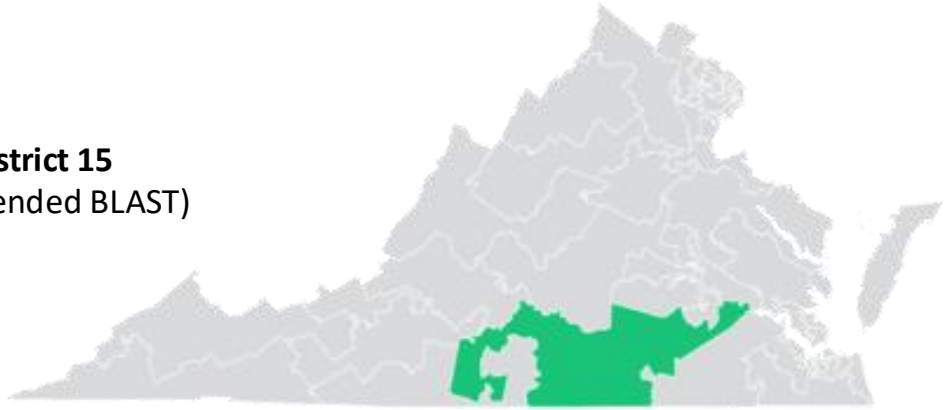
-2019 Participant

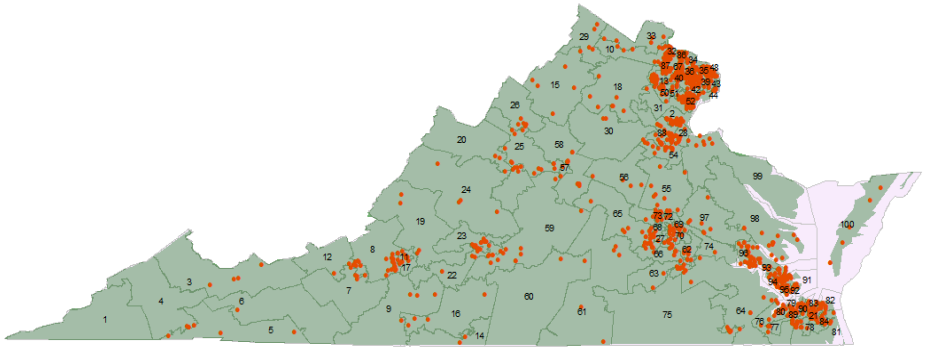
	2021**	2020 (canceled)	2019	2018	2017	2017 GEARUP*	2016	2015	2014	2013
# Participants	469	0	320	320	320	132*	320	240	234	158
Males	47%	0	50%	50%	50%	54%*	50%	50%	51%	54%
Females	**53%**	0	50%	50%	50%	46%*	50%	50%	49%	47%
% URM	**33%**	0	33%	34%	28%	50%*	28%	25%	30%	28%
% VA Senate Districts	**98%**	0	100%	98%	99%	38%*	100%	98%	92%	33%
% VA House Districts	**95%**	0	84%	85%	100%	55%*	95%	95%	100%	68%
% Disabled	2.7%	• **Average 30% URM (disregarding GEARUP anomaly)** • **Increased slightly over time but flat since 2018**								
% First generation	12%									
TOTAL SERVED: 2513								*limited geographic area **includes 2020 selectees		

BLAST 2021 Engagement

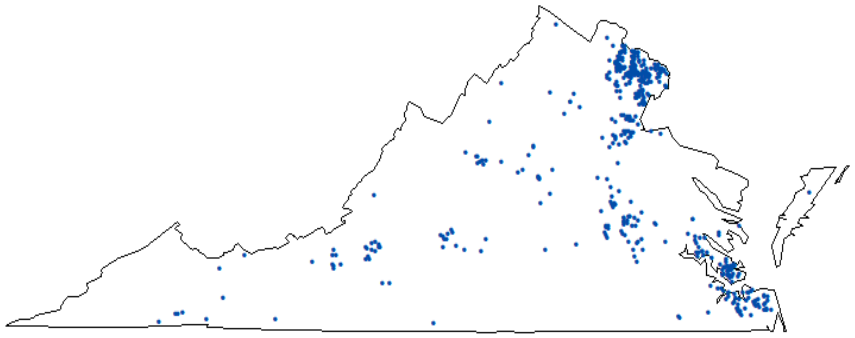
(Go to next slide for animated overlays)

Senate District 15
(0 students attended BLAST)



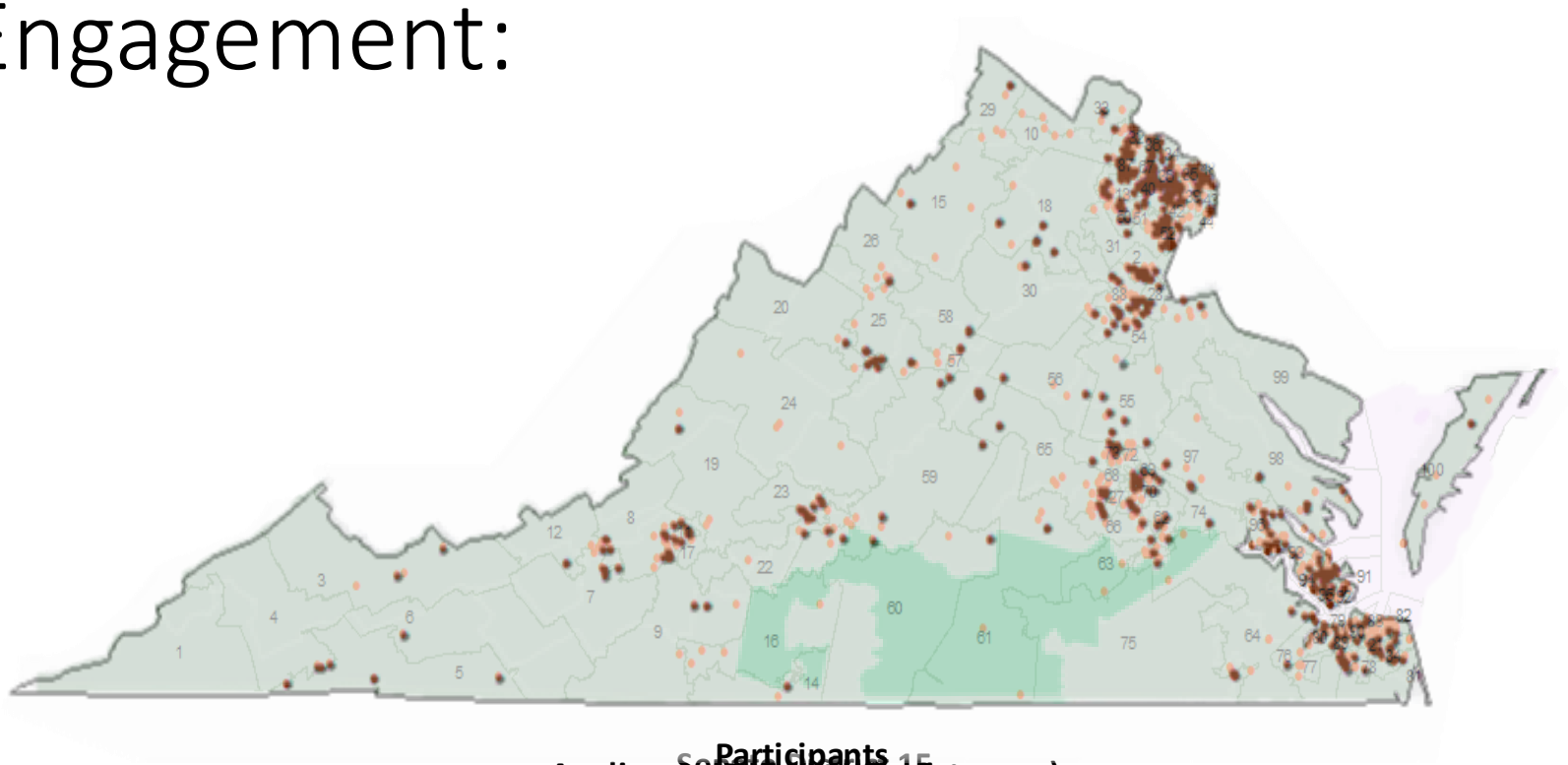


Applicants (Delegate districts map)

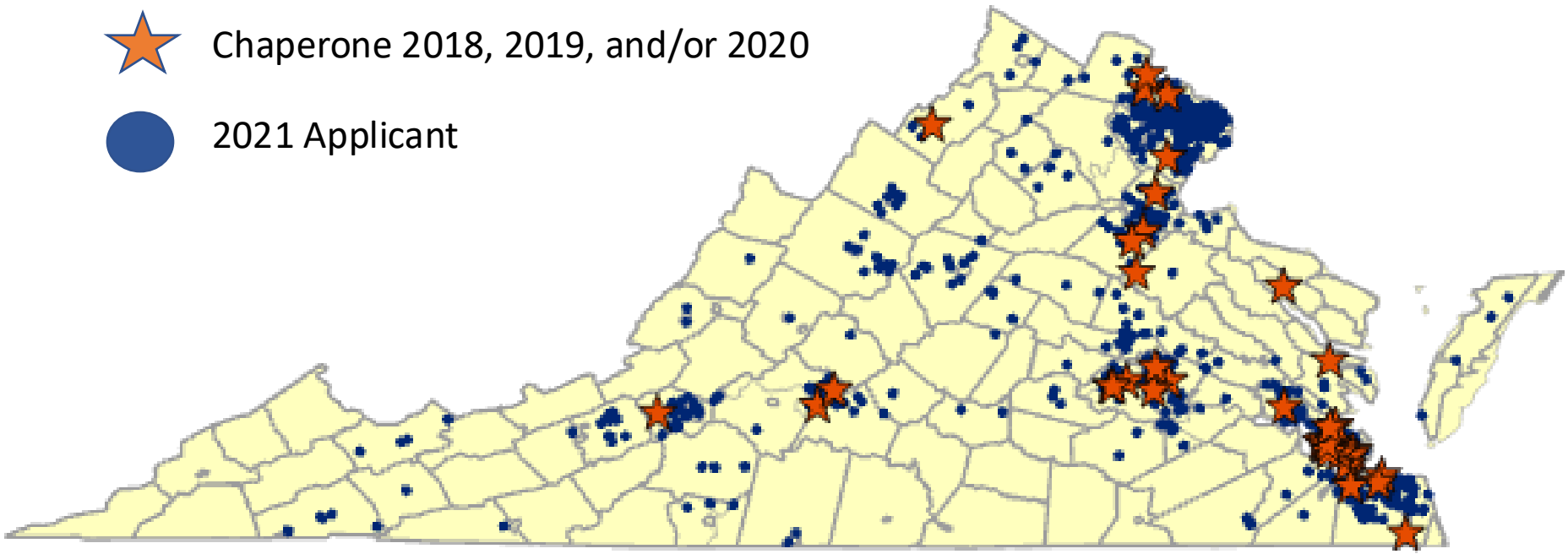


Participants

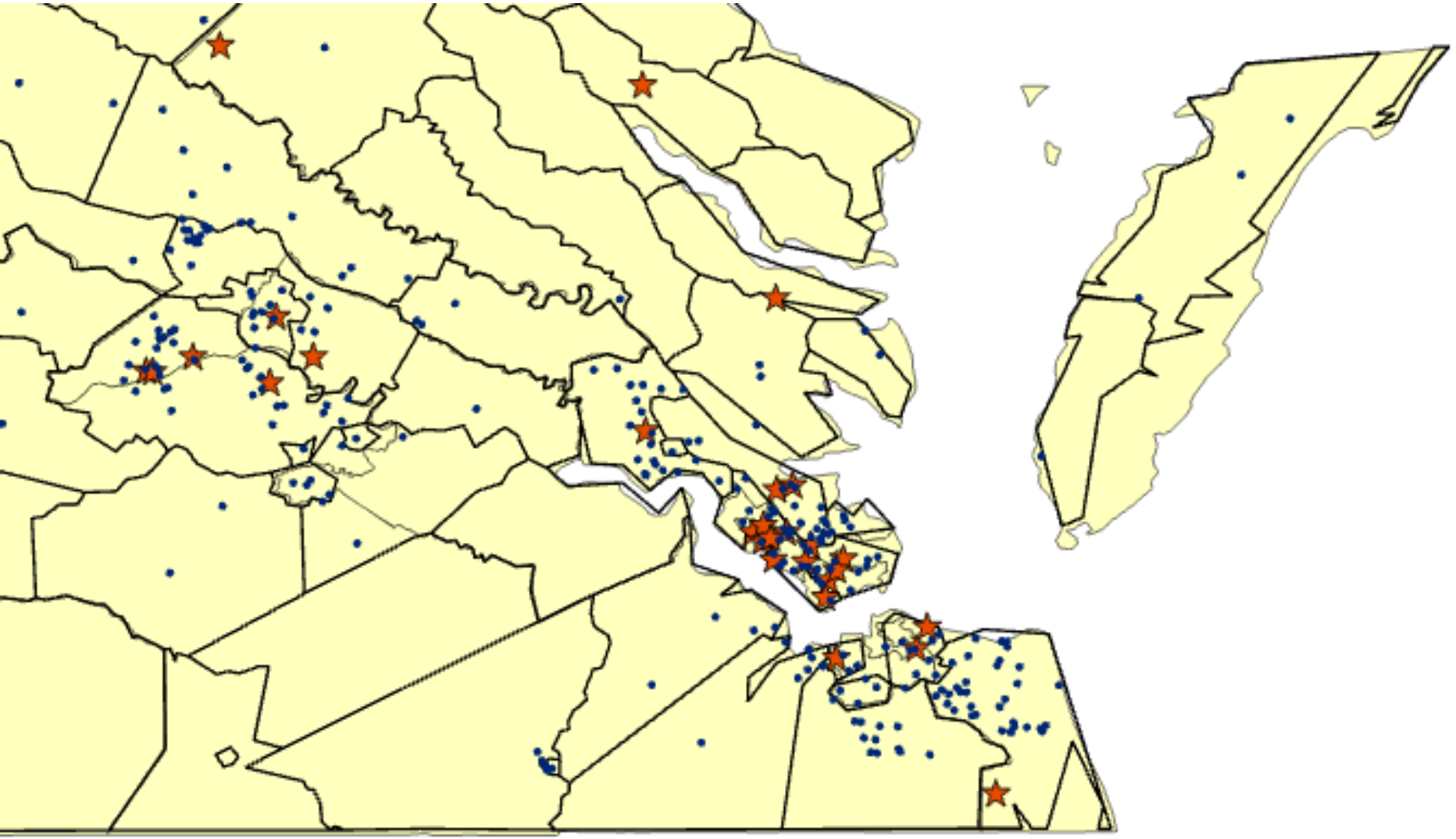
BLAST 2021 Lowest Engagement:



Participants
Applicants (Delegate districts map)
(0 students attended BLAST)
Darker dots= Participants
Orange dots remain to show applicants that were not selected.

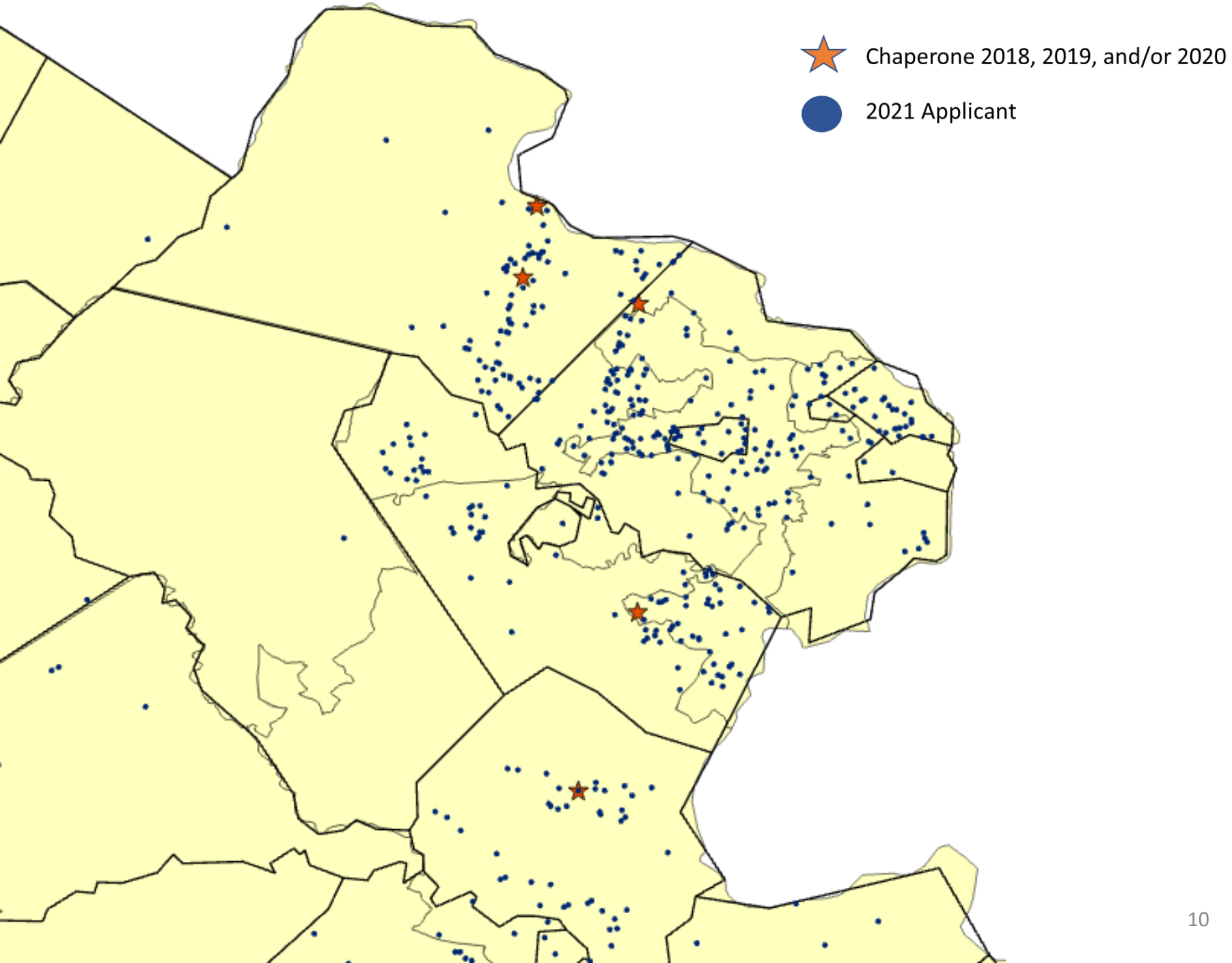


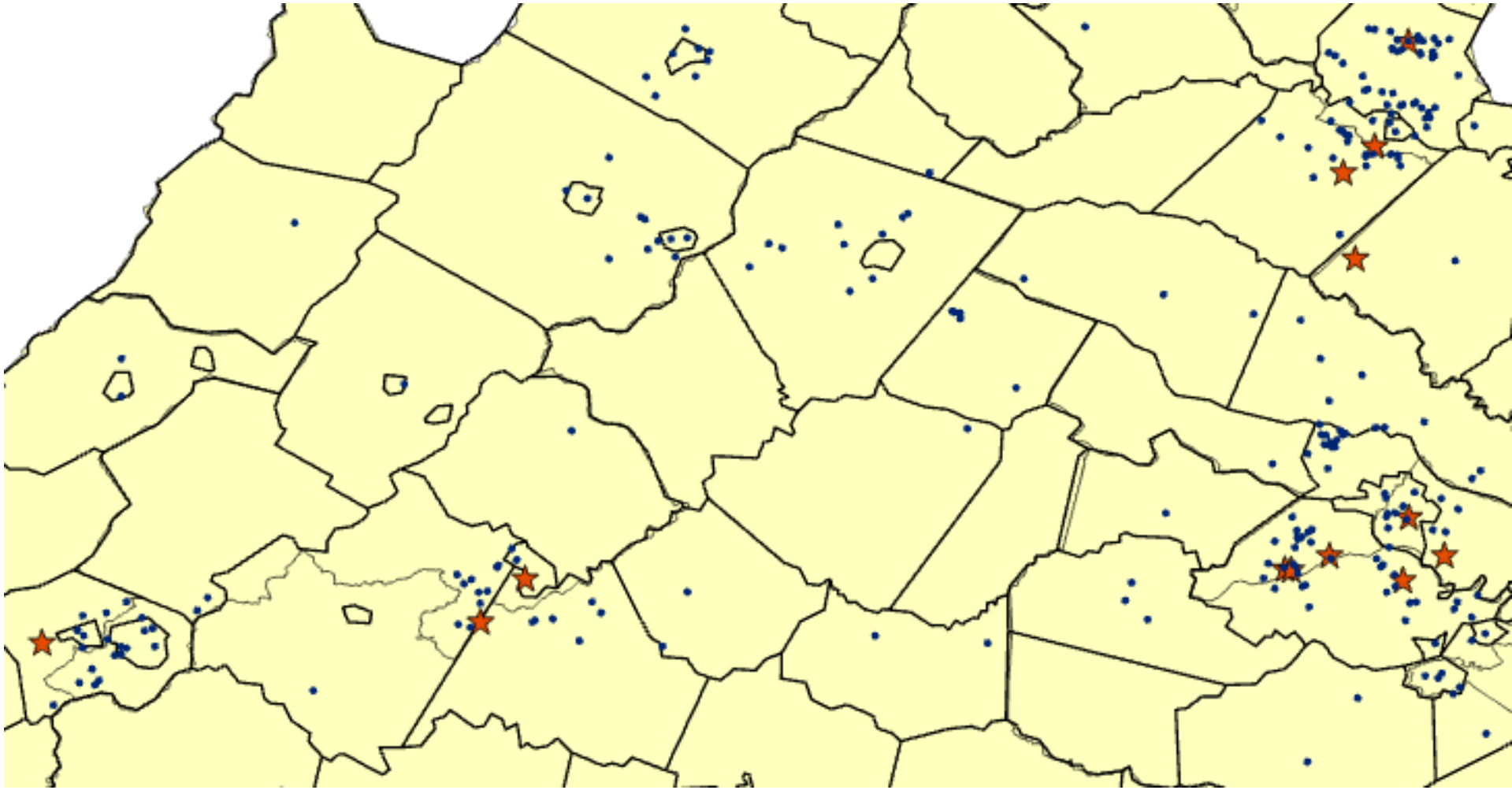
- 38 unique chaperones selected for 2018-2021
- Many serve multiple years/sessions
- Note alignment of student clusters with chaperone locations
  - Could be chaperone recruitment/support
  - Could be both are getting same level of reach from our marketing



Chaperone 2018, 2019, and/or 2020

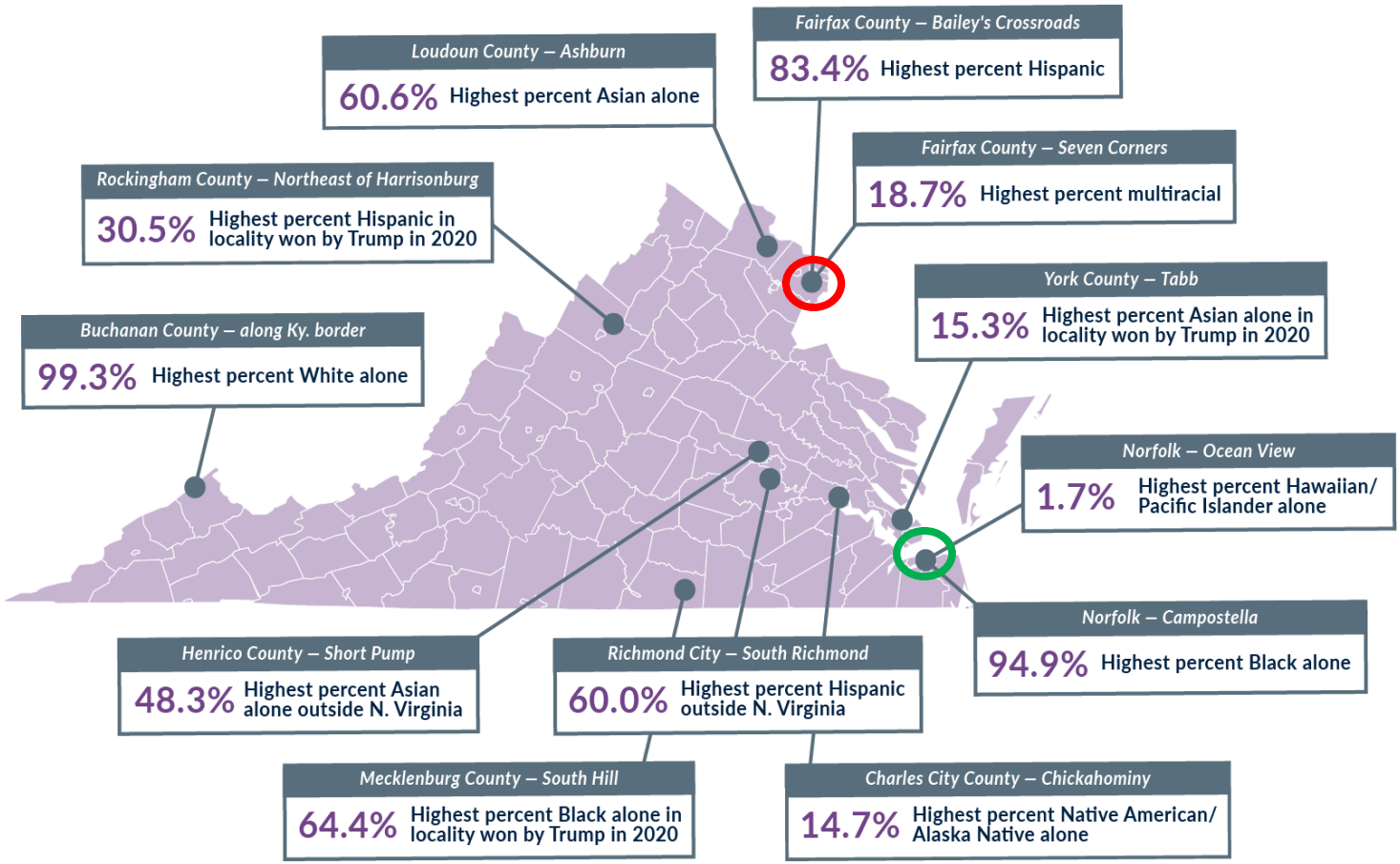
2021 Applicant


Chaperone 2018, 2019, and/or 2020
2021 Applicant



Chaperone 2018, 2019, and/or 2020

2021 Applicant



- Delegate district 79 includes Portsmouth- zero BLAST participants (4 applied).
- Delegate district 38, maybe others as well. For #38 we had 7 applicants, 2 attended. Note that surrounding delegate districts did have applicants but less than half selected (#43, 44, 45, 46, 47, 49, 53). Should look at specific schools.

Other BLAST 2021 findings:

Applications

- **Nearly 1/3 of delegate districts had 3 or fewer applicants** (29/100)
- **Heavy NOVA** application/acceptance (by delegate district)
  - **Not consistent** across all NOVA districts (ex. #33 vs #87; both NOVA but 4 applicants from #33 and 39 applicants from #87)
- **Inconsistent acceptance %**
  - Clear difference in student preparedness; varies by socioeconomic status
  - Impacts quality of applications and possibly # of applicants
- **Gaps exist at school level more than district level**
  - Ex. Virginia Beach has 12 public high schools; only 5 had applicants (but district is certainly represented)
  - Two main things to consider for BLAST:
    - Are we getting applicants? Solutions= marketing.
    - Are reasonable % of applicants being selected? Solutions= student support.

Closer look at Delegate District #38 in NOVA:

- Four high schools, Five middle schools
  - 7 applicants total; 2 attended 2021 BLAST
- % URM low (<30%) in all but one HS and one MS
  - Parkview High
    - 70% Hispanic, 74% Economically Disadvantaged, 41% ESL
    - 2 participants (2020 selectees); sibling males, neither URM
    - 1 Black female started application but did not complete
      - Filled in personal info, teacher info; stopped at essay
  - Sterling Middle
    - 71% Hispanic, 77% Economically Disadvantaged, 61% ESL
    - No applicants

Source: Virginia School Quality Profiles
https://schoolquality.virginia.gov/
Can **sort by** school/division, city/zip, ***delegate/senate districts***

Example: Virginia Beach High Schools

Type	VA Beach	# 2021 Applicants	#2021 Participants	% URM
HS	Floyd Kellam HS	0	0	**13.4**
HS	Frank W Cox HS	1	0	**20.9**
HS	Ocean Lakes HS	4	1	**26.2**
HS	First Colonial HS	0	0	**26.7**
HS	Princess Anne HS	1	0	**27.7**
HS	Kempsville HS	1	1	**39.2**
HS	Salem HS	0	0	**40.5**
HS	Landstown HS **Gov STEM/Tech Aca**	6	5	**40.8**
HS	Tallwood HS	0	0	**46**
HS	Green Run Collegiate HS	0	0	**56.9**
HS	Green Run HS	0	0	**57.8**
HS	Bayside HS	0	0	**58.5**

Source: Virginia School Quality Profiles
https://schoolquality.virginia.gov/
Can **sort by** school/division, city/zip, ***delegate/senate districts***

Example: Virginia Beach Middle Schools

Type	VA Beach	# 2021 Applicants	#2021 Participants	% URM
MS	Old Donation School *	7	4	**11.2**
MS	Princess Anne MS	1	1	**11.9**
MS	Great Neck MS	5	1	**22.1**
MS	Kempsville MS	1	0	**27.6**
MS	Corporate Landing MS	0	0	**33.9**
MS	Virginia Beach MS	0	0	**35.6**
MS	Independence MS	0	0	**36**
MS	Landstown MS	1	1	**37.8**
MS	Lynnhaven MS	1	1	**39.6**
MS	Plaza MS	2	1	**41.7**
MS	Salem MS	1	1	**42.3**
MS	Brandon MS	1	0	**49.7**
MS	Larkspur MS	1	1	**52.3**
MS	Bayside MS	0	0	**72.4**

Source: Virginia School Quality Profiles
https://schoolquality.virginia.gov/
Can **sort by** school/division, city/zip, ***delegate/senate districts***

Type	VA Beach	# 2021 Applicants	#2021 Participants	% Economically	% URM
HS	Floyd Kellam HS	0	0	**14.2**	**13.4**
HS	Frank W Cox HS	1	0	**26.8**	**20.9**
HS	Ocean Lakes HS	4	1	**30.9**	**26.2**
HS	Princess Anne HS	1	0	**31.2**	**27.7**
HS	First Colonial HS	0	0	**34.5**	**26.7**
HS	Salem HS	0	0	**36.2**	**40.5**
HS	Landstown HS **Gov STEM/Tech Aca**	6	5	**38.9**	**40.8**
HS	Tallwood HS	0	0	**43.1**	**46**
HS	Kempsville HS	1	1	**43.3**	**39.2**
HS	Green Run Collegiate HS	0	0	**52.2**	**56.9**
HS	Bayside HS	0	0	**61.1**	**58.5**
HS	Green Run HS	0	0	**61.4**	**57.8**
MS	Old Donation School *	7	4	**14.2**	**11.2**
MS	Princess Anne MS	1	1	**15.7**	**11.9**
MS	Great Neck MS	5	1	**29.1**	**22.1**
MS	Salem MS	1	1	**35.9**	**42.3**
MS	Kempsville MS	1	0	**38.5**	**27.6**
MS	Landstown MS	1	1	**41.6**	**37.8**
MS	Virginia Beach MS	0	0	**43.9**	**35.6**
MS	Independence MS	0	0	**46**	**36**
MS	Corporate Landing MS	0	0	**47**	**33.9**
MS	Plaza MS	2	1	**48.8**	**41.7**
MS	Brandon MS	1	0	**48.8**	**49.7**
MS	Lynnhaven MS	1	1	**49.6**	**39.6**
MS	Larkspur MS	1	1	**61.4**	**52.3**
MS	Bayside MS	0	0	**92.1**	**72.4**

Other BLAST 2021 findings:

Awareness

- Out of about 900 students, top 3 ways:
  - **General school announcement**
    - School website, newsletter, email sent to group
  - **A teacher** or specific lead (i.e. STEM, gifted, etc.)
  - **A personal contact** tell them- friend, family member
- Additional mentions:
  - school counselor
  - internet search
  - VT CEED program- Dr. Lester promotes BLAST
  - School administrator (assistant principal, principal)

Summary of Ideas

1. Awareness
   - Identify target audience at school level
   - Include “media kit” approach as part of recruitment letter
   - Target specific organizations/schools with unique language
2. Application
   - Revise application to remove barriers
   - Create graphic representation of app process and add to website
   - Provide support to students in filling out the application
3. Selection
   - Ensure rubric promotes “best fit,” not just “top student”
   - Consider % selection from each district (set min. score)
4. Retention
   - Notify principal, teacher, counselor upon selection; ask for follow-up
5. Chaperones
   - Broaden Chaperone base by requiring applications and recruiting from target areas
   - Add Ambassador roles to SOW (chaperone summer program, then recruit/support in fall)

Ideas- Details

1. Awareness

- Most students who identified multiple ways they found out about BLAST were in NOVA (only districts #8 and #21 were not)
  - Verifies it is most effective to have **multiple promotion types**
  - Marketing research: people take action 7th time they hear about something
- Be sure language on BLAST **flyer encourages target audience** to apply
- **Media "kit"** to accompany flyers
  - In letter/email, **provide text, images, etc. to make it simple and fast for recipient to share** to their network
    - School newsletters (paper and digital, like Peachjar)
    - Teacher's classroom websites
    - School/district social media sites
- **Customize language in marketing** to specific organizations that serve same target audience
  - Example: A few students named "100 Black Men of (city)" as their awareness source
- **Social media presence-** increase it, close the gaps

Ideas- Details

2. Application

- **Update to reduce/remove barriers** and make selection of target students more likely
  - Example: add definitions of "registered/saved/submitted/complete" on app page of website
  - Remove items for which the data is not actually used.
- Provide application support in target areas
  - **YouTube video** that goes through how to do the application
  - **Webinar** (prerecorded and/or live)
  - **Mentor** in the school willing to sit with students to get it done
    - *Connection with Dr. Joe at Brook's Crossing to do this for BLAST
- **Create graphic** to visually communicate steps of application process- include on program website
- **Change "awareness" to dropdown for easier sorting/analysis**

Ideas- Details

3. Selection

- **Scoring rubric should promote "best fit"** rather than only "top of the class" students for BLAST
- **Limit # selected from active delegate districts** until all districts have some minimum number of applicants considered.

Ideas- Details

4. Retention

- **Notify principals**, recommender, counselor upon student selection; **ask them to congratulate and follow up once the program is over** (I send a reminder in summer and/or ask students to share back to their schools)

- For BLAST, thinking more of retaining in VSGC pipeline.
  - Notifying principal etc. helps create community and a local network of support; use data to update our database and be sure those principals hear about additional opportunities for students AND TEACHERS (JK's flyer for teacher recruitment)

Ideas- Details

5. Chaperones

- Broaden Chaperone base
  - **Recruit teachers from the areas of higher need**
  - **Limit each teacher to one session** to maximize diversity
- Make **"ambassador" role** part of the job
  - SOW would include:
    - All traditional BLAST responsibilities
    - Following summer sessions, Chaperones will actively promote BLAST in their district (presentations, distribute materials, etc.) and recruit students
      - Consider having them give student a code to use if student applies so we are aware (or use BLAST Ambassador as dropdown option under "Awareness")
    - Chaperones mentor interested students in their district who want support completing the application

Virginia Aerospace Science and Technology Scholars

Explore where Science, Technology, Engineering, and Math can take you! http://vsgc.odu.edu/VASTS/

VASTS Demographics for Online Course Participants

	2008-2016	2017	2018	2019	2020	2021
Total Participants	3541	400	485	421	422	495
Males (%)	66	62	62	58	61	56
Females (%)	34	38	38	42	39	44
Underrepresented Minorities (%)*	17	16	20	19	17	21

VASTS Demographics for Summer Academy Attendees

VASTS Summer Academy	2008-2017	2018	2019	2020	2021
Female (%)	37%	40%	41%	39%	49%
Male (%)	63%	60%	59%	61%	51%
Female URM (%)	5%	6%	7%	4%	5%
Male URM (%)	6%	9%	4%	7%	4%
Total URM	11%	14%	11%	11%	9%

VASTS Demographics for Online Course Participants who drop:

- Females: 43% of all online course drops
- URM: 25% of all online course drops

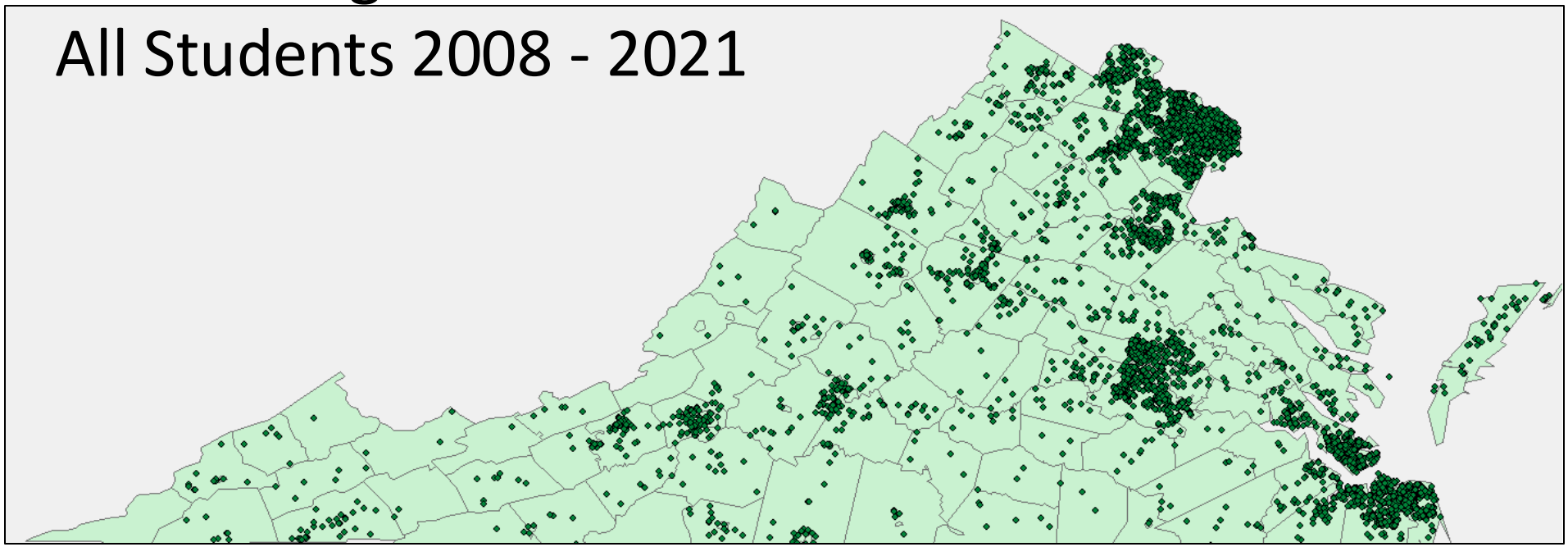
Langley Research Center

Virginia Aerospace Science and Technology Scholars

Explore where Science, Technology, Engineering, and Math can take you! http://vsgc.odu.edu/VASTS/

VASTS Longitudinal Data:

All Students 2008 - 2021

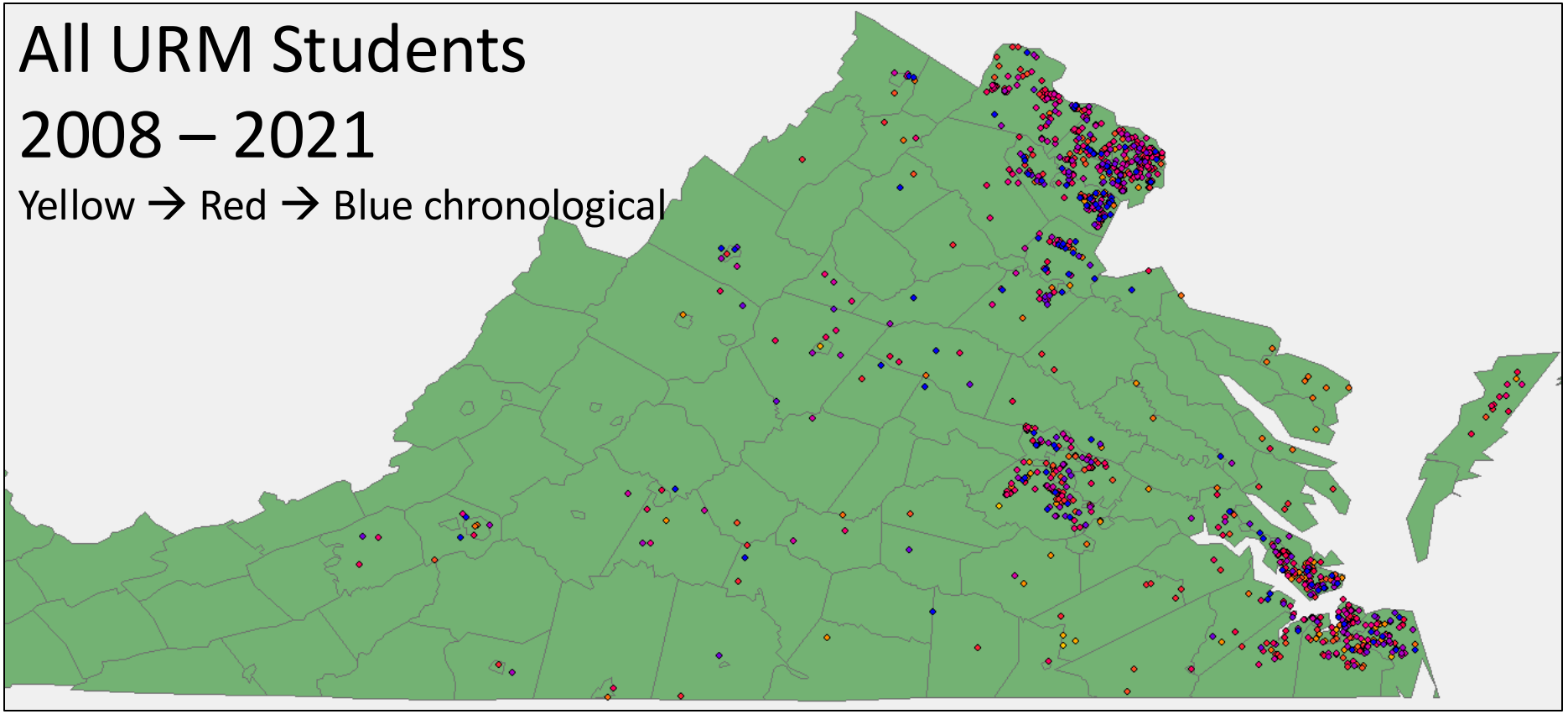


Langley Research Center

VASTS Longitudinal Data:

All URM Students
2008 – 2021

Yellow → Red → Blue chronological

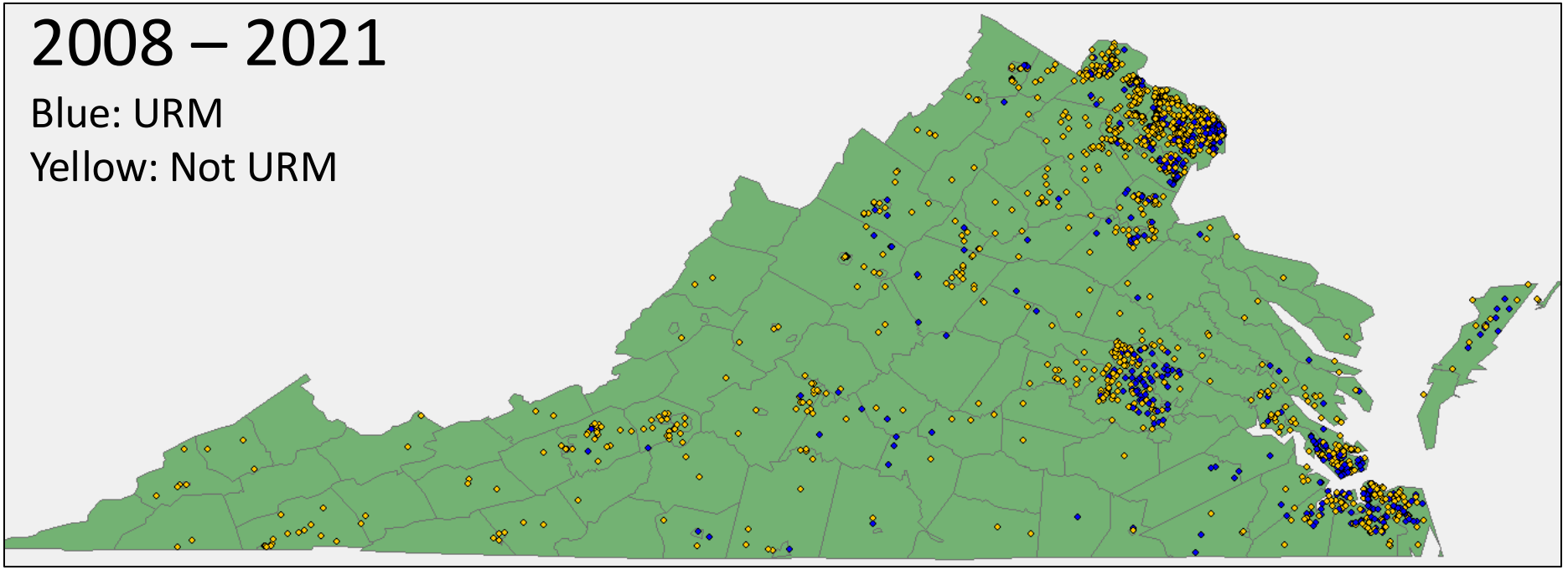


VASTS Longitudinal Data: Students who dropped

2008 – 2021

Blue: URM

Yellow: Not URM



VESSS Summer Academy

VESSS Online Course Participants and Demographic Information

	2016	2017	2018	2019	2020 (Virtual)	2021 (Virtual)
Total Participants	132	117	180	177	232	200
Males (%)	46%	45%	44%	41%	42%	38%
Females (%)	54%	55%	56%	59%	58%	62%
Underrepresented Minorities (%) *	22%	30%	24%	17%	22%	18%

VESSS Demographics for Online Course Participants who drop:

- Females: 53% of all online course drops
- URM: 22% of all online course drops

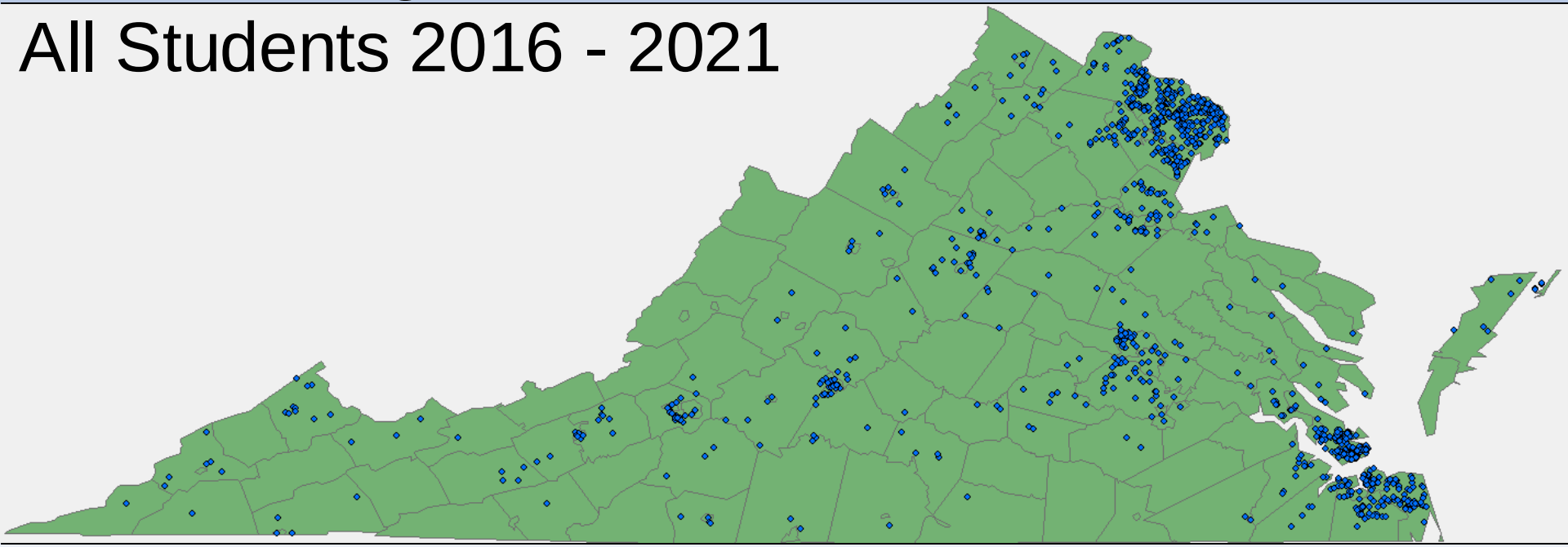
VESSS Summer Academy

VESSS Summer Academy Participants and Demographic Information

	2016	2017	2018	2019	2020 (Virtual)	2021 (Virtual)
Total Participants	69	52	85	69	84	82
Males (%)	54%	37%	35%	36%	38%	38%
Females (%)	46%	63%	65%	64%	62%	62%
Underrepresented Minorities (%) *	15%	23%	21%	17%	14%	16%

VESSS Longitudinal Data:

All Students 2016 - 2021

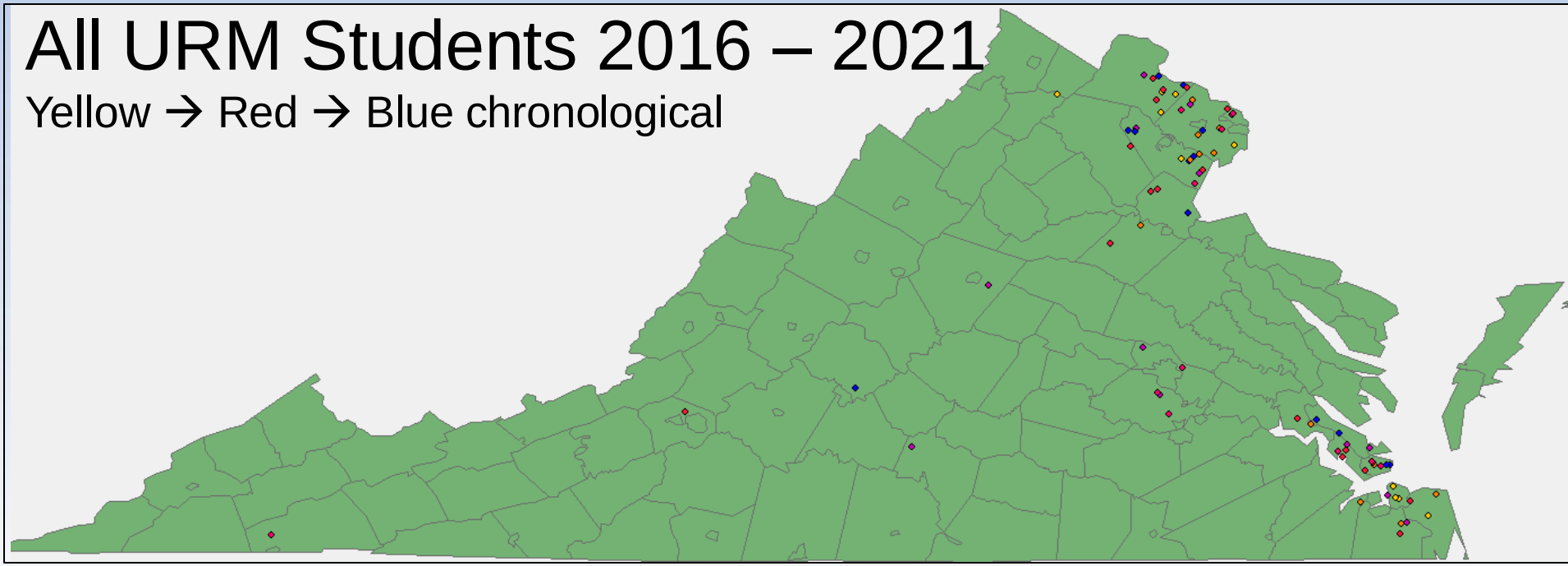


VESSS
Virtual Summer Academy

VESSS Longitudinal Data:

All URM Students 2016 – 2021

Yellow → Red → Blue chronological



Langley Research Center