

Department of Population and Quantitative Health Sciences

Weekly Newsletter

DECEMBER 1-5, 2025



UMass Chan
MEDICAL SCHOOL

UPCOMING EVENTS

Tuesday, December 2, 2:00 PM, PDC N1-1100 or Zoom

PhD Dissertation Defense – Peng (Billy) Zhou, PhD Student - GSBS Population Health Sciences Program

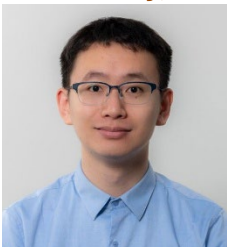


Title: Knowledge-guided machine learning for precision medicine: new methods for robust biomarker discovery and interpretable risk stratification from high-dimensional omics data.

The session will feature a 15-minute presentation of the study, followed by a 15-minute Q&A discussion.

All faculty, students, and guests are warmly invited to attend and participate in the discussion, either in person or via Zoom. [Click here](#) to Zoom.

Wednesday, December 3, 10:00 – 11:00 AM



Research Methods Meeting

Presenter: Dongyuan Song, PhD

Title: Synthetic control removes spurious discoveries from double dipping in single-cell and spatial transcriptomics data analyses

Abstract: Double dipping is a well-known pitfall in single-cell and spatial transcriptomics data analysis: after a clustering algorithm finds clusters as putative cell types or spatial domains, statistical tests are applied to the same data to identify differentially expressed (DE) genes as potential cell-type or spatial-domain markers. Because the genes that contribute to clustering are inherently likely to be identified as DE genes, double dipping can result in false-positive cell-type or spatial-domain markers, especially when clusters are spurious, leading to ambiguously defined cell types or spatial domains. To address this challenge, we propose ClusterDE, a statistical method designed to identify post-clustering DE genes as reliable markers of cell types and spatial domains, while controlling the false discovery rate (FDR) regardless of clustering quality. The core of ClusterDE involves generating synthetic null data as an in silico negative control that contains only one cell type or spatial domain, allowing for the detection and removal of spurious discoveries caused by double dipping. We demonstrate that ClusterDE controls the FDR and identifies canonical cell-type and spatial-domain markers as top DE genes, distinguishing them from housekeeping genes. ClusterDE's ability to discover reliable markers, or the absence of such markers, can be used to determine whether two ambiguous clusters should be merged. Additionally, ClusterDE is compatible with state-of-the-art analysis pipelines like Seurat and Scanpy.

Bio: Dr. Dongyuan Song is an assistant professor in Genetics and Genome Sciences at UConn Health. He received his Ph.D. in Bioinformatics from UCLA, where he worked with Prof. Jingyi Jessica Li in the Department of Statistics and Data Science, and his M.S. in Computational Biology from the Harvard T.H. Chan School of Public Health, advised by Prof. Rafael Irizarry at Dana-Farber Cancer Institute. His lab develops rigorous, interpretable statistical methods for analyzing single-cell and spatial omics data.

Click [here](#) to join.

Wednesday, December 17, 10:00 – 11:00 AM



Research Methods Meeting

Presenter: Randall P. Ellis, PhD

Title: Pooling Cross Product Matrices to Maintain Confidentiality While Enabling Data Sharing and Enhanced Linear Predictive Models

Abstract: • Sensitive big data is often summarized by frequencies, means, and standard deviations of outcomes by univariate categories of interest. Privacy is maintained by requiring $N > 10$ subjects for each statistic. This univariate approach precludes the use of data for linear multivariate regression models for hypothesis testing, prediction or verification. We demonstrate how information can instead be summarized in $Z'Z$ matrices of cross products of dependent and independent variables, with the privacy protected trimming the $Z'Z$ matrix diagonal and off-diagonal cell statistics to zero when $N \leq 10$. Sharing $Z'Z$ matrices permits a broad set of multivariate linear models to be estimated, enables external validation, enables pooling or comparison across distinct samples without requiring any sharing at the individual level, speeds up linear model estimation, and can potentially be used within Machine Learning (ML) iterations to speed up estimation. Trimming small cells causes only minor degradation of results in the $N > 60$ million Risk Adjustment models estimated.

Bio: Dr. Randall P. Ellis is a professor in the Department of Economics at Boston University where he focuses on health economics, spanning both US and international economics topics. In 2024 he received the Victor Fuchs “Lifetime Achievement Award in the Field of Health Economics,” the highest award offered by the American Society of Health Economists. He was one of three original architects of the Hierarchical Condition Category (HCC) models currently used to risk-adjust payments to Medicare Advantage (Part C), Part D prescription drug plans, and the ACA (Obamacare) Health Insurance Exchanges. This paper is a spinoff from a recent project building even better predictive models for risk-adjusted plan payments and performance evaluation. Click [here](#) to join.

New England ATTC Presentations

Wednesday, December 10, 2025, 1:00-2:30 PM

Register: [Gambling Disorder: Relationship to Suicide and Resources for Help](#)

Kristen Beall is offering a second training on a critical topic: Gambling disorder, which is recognized by the American Psychiatric Association as a behavioral addiction with the highest rate of suicide risk. This session provides crucial information on identifying warning signs using DSM-5 criteria, understanding co-occurring disorders, and initiating life-saving conversations. Leave equipped with essential resources and mitigation strategies to address this public health concern in your community.

Tuesday, December 16, 2025, 1:00-2:30 PM

Register: [Impact of the Games We Play](#)

Ted Hartwell is back to the impact of the games we play. Digital gaming has become one of the most dominant forms of entertainment worldwide—surpassing the movie and music industries combined. But with growing popularity comes growing concern. This training explores the line between healthy and problematic gaming, highlighting features in video games and social media that can quickly lead to harm, especially among younger users. Participants will gain insight into how gaming and gambling behaviors intersect, learn to identify warning signs, and discover practical resources to address gaming-related harms.

Please feel free to share this with anyone who may be interested. We hope to see you there! Keep checking our [website](#) and our [LinkedIn](#) page for updates!

The New England ATTC Team

New England ATTC

Population and Quantitative Health Sciences

UMass Chan Medical School

New England ATTC - Addiction Technology Transfer Center (ATTC) Network

NewEnglandATTC@umassmed.edu

DIVERSITY

Working Wisdom: Celebrating Diversity in How We Work

Diversity shows up in many ways — not just in our backgrounds, but also in our **behaviors, communication styles, and energy sources**. Some of us thrive in bustling group settings, others prefer quiet reflection, and many move between both.

This new *Education Corner* in the **Diversity Digest** will offer **short, engaging insights** into how personality and behavior shape our workplace experience. Each installment will highlight a different angle — from introversion and extroversion to communication, decision-making, and well-being — with quick takeaways and fun polls to spark reflection.

Together, we'll explore the **full spectrum of diversity in how we work** — and celebrate the strengths each style brings to our community.

Week 6


Working Wisdom: Celebrating Diversity in How We Work

Spotlight on Ambiverts — Balance in Action




We’ve talked a lot about introverts and extroverts — but most people don’t sit at the far ends of the spectrum. Instead, they’re *ambiverts* — people who show a mix of both traits depending on the situation.

Ambiverts can be outgoing at times, reserved at others, and often find themselves shifting naturally to fit the environment. This flexibility is a real strength, especially in the workplace.

The Science Behind It

- **Ambiverts**  make up a large portion of the population.
- They draw energy from both social interaction and solitude, depending on context.
- Studies suggest ambiverts may excel in roles that require both listening *and* speaking, or leading *and* following.

At a Glance

	 Extrovert	 Introvert	 Ambivert
Definition	Outgoing, thrives on social connection	Reflective, thrives on solitude	Balanced, flexible blend of both
Energy Source	Fueled by people and activity	Fueled by quiet and reflection	Switches easily between modes
Style in Action	Jumps into group activities	Prefers preparation and reflection	Can lead in groups <i>or</i> step back to listen

Your Turn

Do you see yourself as an **Ambivert**?


- Yes — I balance both sides
- No — I lean more one way
- Not sure — still figuring it out

Take this quick, two-question poll and see where our department lands

 <https://arcsapps.umassmed.edu/redcap/surveys/?s=HXP44NKJ38NC9MTT>

Practical Tip

When working in teams, ambiverts can act as bridges — helping extroverts and introverts understand each other’s strengths. If you’re an ambivert, notice when it helps to lean into one mode or the other to keep balance in the group.

 **Next Week:** We’ll wrap up the series by pulling everything together — celebrating the spectrum of how we work and why each style matters.

FYI

UMass Chan Two-Day Holiday Market

December 10 and 11, 10:00 - 2:00
Albert Sherman Center
Multi-Purpose Room - East

Shop for unique gifts and seasonal treats while supporting small and local businesses, all without leaving campus!



UMASS CHAN REMINDERS

A Reminder from Payroll Services: 2026 Personal Time Schedule

- Employees have until 1/10/2026 to use 2025 personal time
- 2026 personal time will be granted on 1/13/2026
- Employees may begin using 2026 personal time after 1/13/2026 for the week beginning 1/11/2026

Remaining Holiday Schedule for 2025:



- Christmas Eve – Wednesday, December 24th
- Christmas Day – Thursday, December 25th

Looking Ahead - Holiday Schedule for 2026:

- New Year's Day – Thursday, January 1st
- Martin Luther King Jr. Day – Monday, January 19th
- Presidents Day – Monday, February 16th
- Patriots' Day – Monday, April 20th
- Memorial Day – Monday, May 25th
- Juneteenth National Independence Day – Friday, June 19th
- Independence Day – Friday, July 3rd (observed)
- Labor Day – Monday, September 7th
- Indigenous Peoples' Day – Monday, October 12th
- Veterans Day – Wednesday, November 11th
- Thanksgiving Day – Thursday, November 26th
- Day After Thanksgiving – Friday, November 27th
- Christmas Eve – Thursday, December 24th
- Christmas Day – Friday, December 25th

PQHS Weekly will be sent to all members of PQHS on Monday mornings. The intent is to provide a snapshot of what is going on that week in PQHS and to share our faculty and staff activities with the department. We depend on you to provide the items we need to share. Please send suggestions of events, faculty invited seminars & talks, honors, student thesis presentations, and news – new babies born! – to Judi (judi.saber@umassmed.edu) & Sarah (sarah.yeboah@umassmed.edu) by Friday each week.