JEAN-GABRIEL YOUNG

Assistant Professor

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RESEARCH INTERESTS: Computational Statistics, Complex Systems, Forecasting, Epidemiology

PROFESSIONAL EXPERIENCE

- *University of Vermont*, Assistant Professor, Department of Mathematics and Statistics[*] 2021–
- *Université Laval*, Professeur Associé Département de Physique 2020–
- *Complex Data LLC*, Consulting 2024–
- *University of Vermont*, Research Assistant Professor, Department of Computer Science 2020–2021
- *University of Michigan*, Postdoctoral Fellow, Center for the Study of Complex Systems 2018–2020
- *Université Laval*, Research Assistant, Group of Prof. Louis. J. Dubé 2012–2018

EDUCATION

Ph.D. in Physics, Université Laval 2014–2018
- *Thesis title*: Inférence et réseaux complexes [†]
- *Advisors*: Louis J. Dubé and Patrick Desrosiers

M.Sc. in Physics, Université Laval 2012–2014
- *Thesis title*: De la détection de la structure communautaire des réseaux complexes [‡]
- *Advisors*: Louis J. Dubé

B.Sc. in Physics, Theoretical Physics major, Université Laval 2009–2012

SCHOLARSHIPS, GRANTS AND AWARDS

Grants

- EPSCoR Pilot Award. "A Data-Driven Framework for Prediction Market Aggregation" (**$22,950**, PI) 2025
- NSF. "Altruistic stress, economic networks, and endogenous organizational change" (**$399,653**, co-PI) 2024
- NSF. "Contagion on Complex Social Systems Conference" (**$47,838**, PI) 2023
- *James Jeffords Grant*, University of Vermont. "Vermont Open Source Connector" (**$4,600**, PI) 2023
- *OVPR Express Grant*, University of Vermont. "Choice Theory in Networks Workshop" (**$3,000**, PI) 2021
- *YRNCS Bridge Grant*, YRCSS. "Simplicial Configuration Models" (**€1,000**, PI) 2016

Fellowships and Scholarships

- *Postdoctoral Fellowship in Studying Complex Systems*, James S. MacDonnell Foundation (**$200,000**) 2017
- *Doctoral Research Scholarship*, Fonds de recherche du Québec – Nature et Technologies (**$60,000**) 2014

[*] **Secondary appointement with**: Vermont Complex Systems Institute, Larner College of Medicine, Department of Computer Science
[†] Inference and complex networks
[‡] Of community structure detection on complex networks

Awards

- *FOSS Award*, 2021 Mining Software Repositories Conference 2021
- *Zachary Karate Club Club* award 2021
- *Best oral presentation award*, NERCCS 2020 2020
- *Board of Honour* (Highest overall mark award by all committee members), Ph.D thesis, Université Laval 2018

PUBLICATIONS

Peer-reviewed journals

38. Symmetry-driven embedding of complex networks in hyperbolic space 2025
S. Lizotte, **J.-G. Young**, and A. Allard
Commun. Phys. 8, 199

37. Governance as a complex, networked, democratic, satisfiability problem 2025
L. Hébert-Dufresne, N. W. Landry, J. Lovato, J. St-Onge, **J.-G. Young**, M.-E. Couture-Ménard, S. Bernatchez, C. Choquette, and A. A. Cohen
npj Complexity 2, 14

36. Reconstructing networks from simple and complex contagions 2024
N. W. Landry, W. Thompson, L. Hébert-Dufresne, and **J.-G. Young**
Phys. Rev. E 110, L042301

35. Network compression with configuration models and the minimum description length 2024
L. Hébert-Dufresne, **J.-G. Young**, A. Daniels, and A. Allard
Phys. Rev. E 110, 034305

34. The simpliciality of higher-order networks 2024
N. W. Landry, **J.-G. Young**, and N. Eikmeier
EPJ Data Sci. 13, 17

33. Hypergraph reconstruction from uncertain data 2023
S. Lizotte, **J.-G. Young**, and A. Allard
Sci. Rep. 13, 21364

32. Accurately summarizing an outbreak using epidemiological models takes time 2023
B. K. M. Case, **J.-G. Young**, and L. Hébert-Dufresne
R. Soc. Open Sci. 10, 230634

31. Opposing responses to scarcity emerge from functionally unique sociality drivers 2023
A. B. Kao, A. K. Hund, F. P. Santos, **J.-G. Young**, D. Bhat, J. Garland, R. A. Oomen, and H. F. McCreery
Am. Nat. 202, 3

30. Exact and rapid linear clustering of networks with dynamic programming 2023
A. Patania, A. Allard, and **J.-G. Young**
Proc. R. Soc. A 479, 2275

29. Compressing network populations with modal networks reveals structural diversity 2023
A. Kirkley, A. Rojas, M. Rosvall, and **J.-G. Young**
Commun. Phys. 6, 148

28. Latent network models to account for noisy, multiply-reported social network data 2023
C. De Bacco, M. Contisciani, J. Cardoso-Silva, H. Safdari, D. Theuerkauf, T. Sweet, **J.-G. Young**, J. Koster, C. Ross, R. McElreath, D. Redhead, and E. A. Power
J. R. Stat. Soc. A 186, 355–375

27. Spatial epidemiology and adaptive targeted sampling to manage the Chagas disease vector Triatoma dimidiata 2022
B. K. M. Case, **J.-G. Young**, D. Penados, L. Hébert-Dufresne, and L. Stevens
PLOS Negl. Trop. Dis. 16, e0010436

26. Impact and dynamics of hate and counter speech online 2022
J. Garland, K. Ghazi-Zahedi, **J.-G. Young**, L. Hébert-Dufresne, and M. Galesic
EPJ Data Sci. 11, 3

25. Clustering of heterogeneous populations of networks 2022
J.-G. Young, A. Kirkley, and M. E. J. Newman
Phys. Rev. E 105, 014312

24. Reconstruction of plant–pollinator networks from observational data 2021
J.-G. Young, F. S. Valdovinos, and M. E. J. Newman
Nat. Commun. 12, 3911

23. Hypergraph reconstruction from network data[§] 2021
J.-G. Young, G. Petri, and T. P. Peixoto
Commun. Phys. 4, 135

22. A clarified typology of core-periphery structure in networks 2021
R. J. Gallagher, **J.-G. Young**, and B. Foucault Welles
Sci. Adv. 7, eabc9800

21. Bayesian inference of network structure from unreliable data 2021
J.-G. Young, G. T. Cantwell, and M. E. J. Newman
J. Complex. Netw. 8, cnaa046

20. Inference, model selection, and the combinatorics for growing trees 2021
G. T. Cantwell, G. St-Onge, and **J.-G. Young**
Phys. Rev. Lett. 126, 038301

19. Networks beyond pairwise interactions: structure and dynamics (*review*) 2020
F. Battiston, G. Cencetti, I. Iacopini, V. Latora, M. Lucas, A. Patania, **J.-G. Young**, and G. Petri
Phys. Rep. 874

18. Improved mutual information measure for classification and community detection 2020
M. E. J. Newman, G. T. Cantwell, and **J.-G. Young**
Phys. Rev. E 101, 042304

17. Macroscopic patterns of interacting contagions are indistinguishable from social reinforcement 2020
L. Hébert-Dufresne, S. V. Scarpino, and **J.-G. Young**
Nat. Phys. 16, 426

16. Phase transition in the recoverability of network history 2019
J.-G. Young, G. St-Onge, E. Laurence, C. Murphy, L. Hébert-Dufresne, and P. Desrosiers
Phys. Rev. X 9, 041056

15. Efficient sampling of spreading processes on complex networks using a composition and rejection algorithm 2019
G. St-Onge, **J.-G. Young**, L. Hébert-Dufresne , and L. J. Dubé
Comput. Phys. Commun. 240, 30

14. Universality of the stochastic block model 2018
J.-G. Young, G. St-Onges, P. Desrosiers, and L.J.Dubé
Phys. Rev. E 98, 032309

13. Exact analytical solution of irreversible binary dynamics on networks 2018
E. Laurence, **J.-G. Young**, S. Melnik, and L.J.Dubé
Phys. Rev. E 97, 032302

12. Phase transition of the susceptible-infected-susceptible dynamics on time-varying configuration model networks 2018
G. St-Onge, **J.-G. Young**, E. Laurence, C. Murphy, and L. J. Dubé
Phys. Rev. E 97, 022305

11. Construction of and efficient sampling from the simplicial configuration model 2017
J.-G. Young, G. Petri, F. Vaccarino, and A. Patania
Phys. Rev. E 96, 032312

10. Strategic tradeoffs in competitor dynamics on adaptive networks 2017
L. Hébert-Dufresne, A. Allard, P.-A. Noël, **J.-G. Young**, , and E. Libby
Sci. Rep. 7, 7576

9. Finite size analysis of the detectability limit of the stochastic block model 2017
J.-G. Young, P. Desrosiers, L. Hébert-Dufresne, E. Laurence, and L. J. Dubé
Phys. Rev. E 95, 062304

8. Growing networks of overlapping communities with internal structure 2016
J.-G. Young, L. Hébert-Dufresne, A. Allard, and L. J. Dubé
Phys. Rev. E 94, 022317

[§]Appears in the Focus Collection on Higher-order Interaction Networks

7. Constrained growth of complex scale-independent systems ¶ 2016
L. Hébert-Dufresne, A. Allard, **J.-G. Young**, and L. J. Dubé
Phys. Rev. E 93, 032304

6. Complex networks as an emerging property of hierarchical preferential attachment 2015
L. Hébert-Dufresne, E. Laurence, A. Allard, **J.-G. Young**, and L. J. Dubé
Phys. Rev. E 92, 062809

5. General and exact approach to percolation on random graphs 2015
A. Allard, L. Hébert-Dufresne, **J.-G. Young**, and L. J. Dubé
Phys. Rev. E 92, 062807

4. A shadowing problem in the detection of overlapping communities 2015
J.-G. Young, A. Allard, L. Hébert-Dufresne, and L. J. Dubé
PLOS ONE 10, e0140133

3. Coexistence of phases and the observability of random graphs ¶ 2014
A. Allard, L. Hébert-Dufresne, **J.-G. Young**, and L. J. Dubé
Phys. Rev. E 89, 022801

2. Percolation on random networks with arbitrary k-core structure 2013
L. Hébert-Dufresne, A. Allard, **J.-G. Young**, and L. J. Dubé
Phys. Rev. E 88, 062820

1. Global efficiency of local immunization on complex networks 2013
L. Hébert-Dufresne, A. Allard, **J.-G. Young**, and L. J. Dubé
Sci. Rep. 3, 2171

Peer-reviewed conference proceeding

5. Cutting through the noise to infer autonomous system topology 2022
K. G. Leyba, J. J. Daymude, **J.-G. Young**, M. E. J. Newman, J. Rexford, and S. Forrest
INFOCOM 2022, Proceedings of the 2022 IEEE International Conference
on Computer Communications, pp. 1609–1618.

4. The OCEAN mailing list data set: Network analysis spanning mailing lists and code repositories 2022
M. Warrick, S. F. Rosenblatt, **J.-G. Young**, L. Hébert-Dufresne, and J. P. Bagrow
MSR 2022, Proceedings of the 19th International Conference on Mining Software Repositories

3. Which contributions count? Analysis of attribution in open source 2021
J.-G. Young, A. Casari, K. McLaughlin, M. Z. Trujillo, L. Hébert-Dufresne, and J. P. Bagrow
MSR 2021, Proceedings of the 18th International Conference on Mining Software Repositories

2. Countering hate on social media: Large scale classification of hate and counter speech 2020
J. Garland, K. Ghazi-Zahedi, **J.-G. Young**, L. Hébert-Dufresne, and M. Galesic
ACL 2020, Proceedings of the Fourth Workshop on Online Abuse and Harms, pp. 102–112.

1. Connected graphs with a given degree sequence: 2020
Efficient sampling, correlations, community detection and robustness
J. Ring IV, **J.-G. Young**, and L. Hébert-Dufresne.
NetSci-X 2020, Proceedings of NetSci-X 2020: Sixth International Winter School and
Conference on Network Science, pp. 33–47.

Other edited works

2. Book review: Advances in Network Clustering and Blockmodeling 2022
J.-G. Young
J. Soc. Struct. 23, 47

1. Open source ecosystems need equitable credit across contributions 2021
A. Casari, K. McLaughlin, M. Z. Trujillo, **J.-G. Young**, J. P. Bagrow, and L. Hébert-Dufresne
Nat. Comput. Sci. 1, 2

¶Editors' suggestion

Preprints (5)

- The network epidemiology of an Ebola epidemic
  L. Hébert-Dufresne, **J.-G. Young**, J. Bedson, L. Skrip, D. Pedi, M. F. Jalloh, B. Raulier, O. Lapointe-Gagné, A. Jambai, A. Allard, and B. Althouse
  arXiv:2111.08686
- The promise of trans-species coexpression analysis in studying the coevolution and ecology of host-parasite interactions.
  A. Hund, P. Tiffin, **J.-G. Young**, and D. Bolnick
  arXiv:2206.12711
  In revision, *Evolution*
- Sensitivity analysis of epidemic forecasting and spreading on networks with probability generating functions
  M. Boudreau, W. H. W. Thompson, C. Danforth, **J.-G. Young**, and L. Hébert-Dufresne
  arXiv:2506.24103
  Submitted, *J. R. Soc. Interface*
- One pathogen does not an epidemic make: A review of interacting contagions, diseases, beliefs and stories
  L. Hébert-Dufresne, Y.-Y. Ahn, A. Allard, J. W. Crothers, P. Sheridan Dodds, M. Galesic, F. Ghanbarnejad, D. Gravel, R. A. Hammond, K. Lerman, J. Lovato, J. J. Openshaw, S. Redner, S. V. Scarpino, G. St-Onge, T. R. Tangherlini, and **J.-G. Young**
  arXiv:2504.15053
  Submitted, *npj Complexity*
- Five misunderstandings in animal social network analysis
  D. Redhead, B. Kawam, **J.-G. Young**, D. Franks, C. S Philson, M. van Duijn, J. Hart, M. B. McElreath, R. McElreath, E. A. Power, C. Ross, S. Sosa, C. Steglich, M. Weiss, and L. J. N. Brent ecoevorxiv:9817
  Submitted, *Nat. Methods*

TEACHING AND MENTORING

Instructor

- STAT-6300: *Bayesian Statistics* — F2021, F2022, F2023, F2024
- STAT-6990: *Statistical Network Analysis* — S2022, S023
- CS-3993: *Independent Study: Machine Learning with graphs* — F2023
- STAT-2510: *Applied Probability* — F2024
- CSYS-6993: *Independent Study: Information, Physics, and Computation* — F2024

Schools and guest lectures

- CSYS/CS 302: Modeling Complex Systems, University of Vermont, Burlington VT, — 2020, 2021
- CNWW: Complex Networks Winter Workshop, Québec, Canada — 2020, 2023
- CRM Summer School: Spectral Theory and Applications, Québec, Canada — 2016

Supervision

- Postdoctoral fellows:
  - ◇ Nicholas W. Landry, University of Vermont — 2022–2024
- Ph.D. students:
  - ◇ William H. Thompson, University of Vermont — 2024–
  - ◇ Simon Lizotte, Université Laval (co-direction with Antoine Allard) — 2022–
  - ◇ Nicholas J. Robert, University of Vermont — 2021–
  - ◇ B. K. M. Case, University of Vermont — 2021–2023
- Master's students:
  - ◇ Aviral Chawla, University of Vermont — 2022–2024
  - ◇ Erik Weis, University of Vermont — 2021–2023
  - ◇ Simon Lizotte, Université Laval (co-direction with Antoine Allard) — 2020–2022

- Undergraduate students:
  - ◇ James Lemahieu (Honors Thesis), University of Vermont — AY 25/26
  - ◇ Erik Arnold (Honors Thesis), University of Vermont — AY 25/26
  - ◇ Erin Silver (Research Intern), University of Vermont — Summer 2024
  - ◇ Nathan Blanchard (Honors Thesis), University of Vermont — AY 24/25
  - ◇ Trevor Blanchard (Honors Thesis), University of Vermont — AY 22/23

INVITED TALKS AND SELECTED CONFERENCE CONTRIBUTIONS

- *"Designing interventions with message passing on clustered graphs"* — 2025
  Montréal Network Science Workshop 2025, Montréal, QC, Canada (invited keynote)
- *"Contagion, models and control."* — 2025
  Columbia University, New York, NY (invited lecture)
- *"Message passing for intervention design in networks."* — 2024
  QMDN24, Los Alamos, NM (invited talk)
- *"Bayesian framework for inference on heterogenous waste-water networks."* — 2024
  NetSci 2024, Québec, Canada (contributed talk)
- *"Complex or simple? Determining a contagion's type from observational data."* — 2024
  WDPCN24, São Paulo, Bazil (invited talk)
- *"What can we learn from low-dimensional representations of networks?"* — 2024
  - ▷ NetSI, Boston MA, USA (invited seminar)
  - ▷ Interaction Data Lab, Paris, France (invited seminar)
- *"Modeling the Spread of Clostridioides Difficile in Hospitals"* — 2023
  SIAM DS23, Portland, OR, USA (talk)
- *"Quantifying Contagion Complexity"* — 2023
  Dynamics of Interacting Contagions – Santa Fe Institute, NM, USA (talk)
- *"Statistical Modeling and Inference for Higher-Order Network Science"* — 2023
  KAIS-Vermont Workshop, Seoul, Korea (invited talk)
- *"Uncertain Network Science"* — 2021–2023
  - ▷ Channing Network Science Seminar, Boston MA, USA (invited seminar)
  - ▷ NERCCS 2022 conference, Buffalo, NY, USA (invited plenary)
  - ▷ University of Vermont — Mechanical Engineering Seminars, Burlington VT, USA (invited seminar)
  - ▷ Central European University–Department of Network and Data Science, online (invited seminar)
  - ▷ CNRS, Centre d'Écologie Fonctionnelle et Évolutive, Montpelier, France (invited talk)
  - ▷ University of Maastricht – Department of Data Analytics and Digitalisation, Maastricht, Netherlands (invited seminar)
- *"Which contributions count? Analysis of attribution in open source"* — 2021-2022
  - ▷ MSR2021, online (talk)
  - ▷ BTV Data Science Meet-up, Burlington, VT, USA (talk)
- *"Inference with growing networks"* — 2021
  CNWW2020, online (invited talk)
- *"Bayesian approaches to network epidemiology"* — 2020
  HONS 2020, online (invited talk)
- *"Paper Unwind: Network archaeology"* — 2020
  School of the NERCCS 2020 conference, Buffalo, NY, USA (invited talk)
- *"Efficient and fully bayesian inference of complex networks from noisy data"* — 2019–2020
  - ▷ Indiana University — CNETS, Bloomington, IN, USA (invited seminar)
  - ▷ Université Laval — CIMMUL, Québec, QC, Canada (invited seminar)
  - ▷ Netsci-X 2020, Tokyo, Japan (talk)
  - ▷ NERCCS 2020, Buffalo, NY, USA (talk, best presentation award)
  - ▷ University of Michigan — Jacobs Lab (UMSI), Ann Arbor MI, USA (invited seminar)
  - ▷ Indiana University — Betzel Lab, Bloomington, IN, USA (invited seminar)

▷ Netsci 2020, online (talk)

- *"Compression of treelike complex networks using layered configuration models"* 2019
  Netsci 2019, Burlington, VT, USA (talk)
- *"Bayesian inference of effective contagion models from population level data"* 2019
  SINM 2019, Burlington, VT, USA (talk)
- *"Universality of the stochastic block model"* 2019
  SYNS Warm-up Event 2019, Burlington, VT, USA (invited talk)
- *"The statistical physics of inference for Complex Networks"* 2018
  Department of Physics Colloquium Oakland University, Rochester, MI, USA (invited seminar)
- *"Network archaeology: phase transition in the recoverability of network history"* 2018
  ▷ Univeristy of Colorado Boulder — StatOptML seminar, Boulder, CO, USA (invited seminar)
  ▷ Univeristy of Vermont — Vermont Complex Systems Institute, Burlington, VT, USA (invited seminar)
  ▷ Netsci 2018, Paris, France (talk)
  ▷ Sentinel North 2018 Annual Meeting, Québec, Canada (plenary)
  ▷ Univeristy of Bath — Centre for Networks and Collective Behaviour, Bath, UK (invited seminar)
  ▷ Connected Past 2018, Oxford, UK (talk)
- *"Construction of and efficient sampling from the simplicial configuration model"* 2017
  ▷ HONS 2017, Indianapolis, IN, USA (invited talk)
  ▷ Indiana University — School of Informatics, Bloomington, IN, USA (invited seminar)
  ▷ University of Michigan — Center for the Study of Complex Systems, Ann Arbor, MI, USA (invited talk)
- *"Statistical mechanics of mesoscopic structure extraction"* 2017
  Netsci 2017, Indianapolis, IN, USA (talk)
- *"Finite size analysis of the detectability limit of the stochastic block model"* 2016
  ▷ Netsci 2016, Seoul, Korea (lightning talk)
  ▷ SINM 2016, Seoul, Korea (talk)
  ▷ ISI Foundation, Torino, Italy (invited seminar)
- *"Structural preferential attachment: scale-free benchmark for overlapping community detection algorithms"* 2015
  Netsci 2015, Zaragoza, Spain (poster)
- *"Structural preferential attachment of community structure and its relation to Dunbar's number"* 2014
  Netsci 2014, Berkeley, CA, USA (talk)
- *"Complex networks are an emerging property of hierarchical preferential attachment"*[||] 2014
  NetSci 2014 Science, Berkeley, CA, USA (poster)
- *"Local and global solutions to community detection: when resolution matters"* 2013
  NetSci 2013 , Copenhagen, Denmark (poster)

LEADERSHIP AND SERVICE

Organizer

- *Organizer*, Workshop on Complex Networks in Banking and Finance, Field Institute, Toronto 2026
- *Organizer*, CNWW, Complex Networks Winter Workshop, Québec, Canada 2021, 2023, 2025
- *Program Chair*, NetSci 2024 (School and Conference on Network Science) 2024
- *Chair*, CCSS23 (Contagion on Complex Social Systems) 2023
- *Organizer*, SINM (Statistical Inference for Network Models) 2021, 2022, 2023
- *Satellite location organizer (UVM)*, NERCCS 2022 2022
- *Organizer*, SIAM DS 21 Mini-Symposium on Dynamics in Higher-Order Networks, online 2021
- *Co-chair*, First OpenNetSci Hackathon, Burlington VT, USA 2019
- *Organizer*, NetSci 2019, Burlington VT, USA 2019

Service

- *Contributor*, Several open-source projects *ongoing*
- *Member*, Faculty Search Committees, Statistics, UVM 2022, 2023, 2024
- *Member*, Program Committee, Complex Systems, UVM 2024–
- *Seminar chair*, STAT@UVM 2022–
- *Seminar chair*, Vermont Complex Systems Institute 2021–2023

[||] Outstanding poster award

Reviewer

- *Journals* (36): Science Advances, Nature Communications, SIAM Review, Physical Review X, Physical Review Letters, Psychological Methods, PLOS Computational Biology, JMIR Public Health Surveillance, The Annals of Applied Statistics, Physical Review E, Physical Review Research, EPJ Data Science, Scientific Data, Cambridge Elements, EPL, Journal of Open Source Software, Journal of Physics: Complexity, Journal of Physics A, Journal of Applied and Computational Topology, NPJ Complexity, Scientific Reports, PLOS Complex Systems, PLOS ONE, Palgrave Communications, Journal of Complex Networks, Physics Letter A, Chaos Solitons & Fractals, Entropy, Network Science, Animal Behaviour, Applied Network Science, Knowledge and Information Systems, Journal of Computational Science, Chaos.
- *Grants*: Panelist, NSF, IIS Division (2019).

Program committee

- Northeast Regional Conference on Complex Systems (NERCCS) 2020, 2021, 2022, 2024, 2025
- International School and Conference on Network Science (NetSci) 2019, 2020, 2023, 2024(X), 2025
- International Conference on Complex Networks and their Applications 2023
- SIAM Workshop on Network Science (SIAM NS) 2018, 2020

PhD thesis comittees

- *Tung-Lin Liu*, Food Systems. Advisor: Christopher Koliba ongoing
- *Lucy Greenberg*, Statistics. Advisor: Jeffrey S. Buzas ongoing
- *Larry D. Long*, Complex Systems and Data Science. Advisor: Britt Williams 2025
- *Nicolò Ruggeri* (ETH), Machine Learning and Network Science. Advisor: Caterina de Bacco 2024
- *Mariah Bourdreau*, Mathematics. Advisor: Laurent Hébert-Dufresne 2024
- *Samuel Rosenblatt*, Computer Science. Advisor: Laurent Hébert-Dufresne 2024
- *Damin Zhu*, Statistics. Advisor: Jeffrey S. Buzas 2023
- *Michael Arnolds*, Complex Systems. Advisor: Peter Dodds 2023

SELECTED SOFTWARE

(Complete list available online)

- Bayesian inference of networks from noisy data (stan)
- Bayesian inference of effective contagion models from population level data (stan)
- Reconstruction of plant–pollinator networks from observational data (stan + python)
- Sequential MC sampler for Network Archaeology (python + C++)
- MCMC sampler for the Simplicial Configuration Model (C++)
- MCMC sampler for the Stochastic Block Model (C++)
- Structural Preferential Attachment community detection benchmark (C++)

VARIA

Selected media coverage

- "*Physiology-inspired networks could improve political decision-making*." Phys.org 2025
- "*Are ideas contagious?*." Phys.org 2024
- "*A selection of 2020's highlighted research*." Nature 2021
- "*To find the right network model, compare all possible histories*." Phys.org 2021
- "*Fighting Hate Speech with AI & Social Science*," Complexity Podcast 2020
- "*How you talk about coronavirus actually impacts its spread*," cnet 2020
- "*Neue Studie zeigt Wirksamkeit von Gegenrede im Netz*," netzpolitik.org 2020
- "*When coronavirus is not alone*," Phys.org 2020

- "*The shape of randomness*." Physics Central 2017
- "*What algae can tell us about political strategy*." Phys.org 2017
- "*L'univers complexe de Jean-Gabriel Young*." Le Soleil (French) 2017