

## Curriculum Vitae (January 2019)

# Jayanne English

### **Home Institution:**

Department of Physics and Astronomy  
University of Manitoba  
Winnipeg, Manitoba  
Canada R3T 2N2

Phone: +1-204-474-7105  
FAX: +1-204-474-7622  
[Jayanne\\_English@umanitoba.ca](mailto:Jayanne_English@umanitoba.ca)  
[HTTP://www.physics.umanitoba.ca/~english](http://www.physics.umanitoba.ca/~english)

**Citizenship:** Canadian. **Birthdate:** Dec. 13, 1954.

## Highlights

### **Research Interests:**

Origin of structure within galaxies, including the formation of halos and other features around galaxies; galaxy kinematics; scientific data visualization.

## Positions Held

### **Current Position:**

University of Manitoba,

- Associate Professor      since Apr. 2005  
- Assistant Professor      July 2000 - Mar.2005

### **Post-Doctoral Positions:**

- |   |   |                                |
|---|---|--------------------------------|
| <ul style="list-style-type: none"> <li>• Space Telescope Science Institute</li> </ul> | <ul style="list-style-type: none"> <li>• coordinate the Hubble Heritage Project</li> <li>• independent research in astronomy</li> </ul> | <p>1998-2000</p>               |
| <ul style="list-style-type: none"> <li>• Queen's University</li> </ul>                | <ul style="list-style-type: none"> <li>• Canadian Galactic Plane Survey</li> <li>• collaborative research in astronomy</li> </ul>       | <p>1996-2000<br/>1994-1998</p> |

## Education

- |  |  |                  |
|--|--|------------------|
| <ul style="list-style-type: none"> <li>• Australian National University</li> </ul>                     | <ul style="list-style-type: none"> <li>Ph. D. (Astronomy and Astrophysics)</li> </ul>                | <p>1989-1994</p> |
| <ul style="list-style-type: none"> <li>• University of Toronto</li> </ul>                              | <ul style="list-style-type: none"> <li>B. Sc. (Physics &amp; Astronomy Double Specialist)</li> </ul> | <p>1984-1989</p> |
| <ul style="list-style-type: none"> <li>• The Ontario College of Art (and Design University)</li> </ul> | <ul style="list-style-type: none"> <li>• Diploma -A.O.C.A. (General Studies)</li> </ul>              | <p>1980-1984</p> |

### ***Visiting Scholar (Research Leaves):***

• <b>University of Zurich (UZH)</b>	• Institute of Computational Science. • Host: George Lake; Education.	09/2017- 06/2018
• University of Oxford	• Sub-Dept Astrophysics • Host: Martin Bureau; Astronomy Research	07/2015 - 07/2016
• Nottingham-Trent University	• Dept of Physics • Host: Haida Liang; Visualization Research	06/2009 - 08/2009
• <b>Australian National University</b>	• RSSAA • Host: Ken Freeman; Astronomy Research	02/2009 - 04/2009
• <b>University of New South Wales</b>	• College of Fine Arts • Host: Brad Miller; Visualization Research	01/2009
• <b>Australia Telescope National Facility</b>	• Galaxies Group • Host: Baerbel Koribalski; Astronomy Research	10/2008- 06/2009

### ***Recognitions***

- Distinguished Visitorships:  
Visitorships that were invited and financially supported by the institutes are boldfaced in the Visiting Scholar table.
- Art and Music:
  - Juried shows at Propellor Gallery, Toronto.
    - 2018 “Out of this World”, with students from UZH.
      - Visualization of cosmology data.
    - 2018 “Colour. What Do You Mean By That?”
      - Animated astronomy data video.
    - 2014 “Occam’s Razor”, with Willy LeMaitre.
      - Lenticular of astronomy data.
  - 2018 “La Rencontre, Science Meets Art” exhibition at ETH, Zurich.
    - Visualization of cosmology data.
  - 2014 Juried show at COSMOS 15th International Art-Sci Juried Exhibition New York Hall of Science.
  - 2015. Performance in Toronto of “Collide” created with Governor-General Award-winning Nicole Lizée.
  - 1980s. Scholarships at University of Toronto (Robertson) and OCA, including selected for the New York City Off-Campus Program.
- Outreach Image-making:
  - 2006 National Radio Astronomical Observatory Image Competition.

## Professional Service Examples

### *University Service:*

- Chaired departmental committees: Colloquium, Outreach, Graduate Studies.
- Additional departmental committees: Hiring; Organizing space; Nominations.
- Faculty Committees member: Interdisciplinary Speakers; Promotion; Hiring.
- Academic committees: Thesis at Masters and PhD levels in Physics & Astronomy and Faculty of Engineering.

*Other:* Review panel member on telescope time assignment committees. Contribute to organizing conferences and meetings. Referee professional publications.

### *Recent Examples of Service:*

- |                         |  |                      |
|-------------------------|--|----------------------|
| • Co-lead.              | • UM visualization for Canadian Initiative for Radio Astronomy Data Analysis (CIRADA)      | 07/2018-             |
| • Committee Member      | • VLA Sky Survey (VLASS)<br>• Expert community member at large                             | 11/2018-             |
| • Co-chair Committee    | • VLA Sky Survey (VLASS)<br>• Education and Outreach<br>• Member of Science Survey Group   | 01/2017 -<br>11/2018 |
| • Review Panelist       | • Space Telescope Science Institute<br>• Hubble Space Telescope                            | 11/2014 -<br>06/2015 |
| • Review Panelist       | • European Southern Observatories<br>• Atacama Large Millimeter/Submillimetre Array (ALMA) | 06/2011 -<br>06/2015 |
| • Review Panelist       | • University of Manitoba, Canada<br>• Promotion and Tenure                                 | 08/2012 -<br>02/2013 |
| • PhD External Examiner | • University of Victoria, B.C Canada<br>• Dept of Physics and Astronomy                    | 05/2012 -<br>08/2012 |

## Research Collaborations

### • **Canadian Collaborative Team:**

- University of Manitoba co-lead on information and data visualization for the Canadian Initiative for Radio Astronomy Data Analysis (CIRADA).<sup>1</sup>

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<sup>1</sup> CIRADA will comprise the infrastructure, computing capability, and expertise needed to convert the enormous raw data streams from next-generation telescopes into sophisticated digital products.

- **International Collaborative Teams:**

- Current lead on the Atacama Large Millimetre/submillimetre Array (ALMA) observations acquired for the CONTINUUM HALOS IN NEARBY GALAXIES: AN EVLA SURVEY;
- Contributed to accepted proposals the Australia Square Kilometre Array Precursor (WALLABY) and the MeerKAT (MHONGOOSE);
- Visualizing VLA Sky Survey (VLASS) data, both for the public and as catalogue advanced products for astronomers.

- **International Research Projects:**

- “Kinematics of Rotation Curves of Late Type Galaxies”, Oxford University
- "Rotation Curves and Simulated Galaxies", University of Zurich.
- “Visualization in 3D immersive Virtual Reality”, RIPEN, Japan.

### **Grants**

- Most Recent (2015-2017): UM University Collaborative Research Program (\$25K) and Interdisciplinary/New Directions Research Collaboration Initiation Grant (\$10K) for “3D visualization of astronomical data using immersive displays”.
- Held National Science and Engineering Research Canada (NSERC) grants.

### **Development of Academic Programs and Teaching**

**University of Manitoba:** UM teaching responsibilities cover the year 2000 to the present time. Typical course load: three to four courses per academic year. The introductory astronomy courses have up to 175 students and the upper year courses a few to a dozen scholars.

- Co-developed the UM’s first undergraduate and graduate astronomy stream. On-going engagement in curriculum development. Currently developing an advanced observational astronomy course.
- At UM have been responsible for one graduate course in astronomy (Galaxies), 4 undergraduate courses in astronomy (Galaxies, General Astronomy courses), and 2 undergraduate courses in physics (Non-calculus Physics; Optics).
- Supervision: 1 research associate, 1 PDF, 1 PhD, 2 MSc, several summer interns.

**University of Zurich:** Taught two courses.

- “The Art of Scientific Visualization.” Graduate level; Included workshops and studios.
- “Galaxies and Cosmology.” Undergraduate level; Co-instructor taught Cosmology.

### **Example of Project Management**

Coordination and facilitation of the Hubble Heritage Project at Space Telescope Science Institute for 2 years. The time consisted of 7 members. My responsibilities included implementing policy (e.g. negotiating which institutions got credit and in which ranking), coordination and negotiations with the Office of Education and Public Outreach, and engaging the scientists whose data were used in the images and who were involved in image-making contests. I authored the website, designed the logo, and produced contests for acquiring telescope time. As well as making astronomy images and art directing images, I trained the team in visual techniques.

### Examples of Recent Invited Professional Presentations

- “*Cosmos versus Canvas: Using Art to Reveal Science*” with hands-on workshops: Ruhr University, Germany (2018, 2016), University of Zurich, Switzerland (2015), University of Ottawa, Canada (2014), ASTRON, The Netherlands (2014)
- “*A Constellation of Results from the Continuum Halos in Nearby Galaxies an ELVA Survey.*” Oxford University, UK (2016)

### Examples of Education and Public Outreach

- *Presentations:*
  - “*Cosmos versus Canvas*”  
Royal Astronomical Society of Canada, Edmonton Chapter (2018); University of Zurich (2017); Modern Art Oxford (2017); Green Templeton College, U. Oxford (2016); 7.4 Limited, Oxford (2016); Wadham College, U.Oxford (2016); Rutland Astronomical Society, Oakham, UK (2016); Canadian Space Society, Winnipeg, Canada (2015).
  - “*Fundamentals of Imaging for Optimizing Graphics*”  
Fiege Collective, Winnipeg, Manitoba (2017); “Space Time Art!”  
Leonardo Art Science Evening Rendezvous (LASER) Zurich (2018).
- *Media:*  
Voices from Oxford (2016) video of Cosmos vs Canvas — <http://voicesfromoxford.org/video/are-images-of-space-realistic/647>; several podcasts, google hangouts, TV and radio interviews; image-making videos on YouTube (2009),
- *Engagement with the Public:*  
I was the astronomy columnist on the Canadian Broadcasting Corporation’s high profile “Quirks and Quarks” radio show (2000-2002).
- *Interactions with artists:*  
Aleksandra Mir [I provided a workshop and have an interview in her book for shows at Tate Liverpool and Modern Art Oxford] (2016); awarding-winning new music composer Nicole Lizee [I produced visuals and animations incorporated into “Collide”] (2015); on discussion panels with AceArtInc and the Winnipeg Symphony Orchestra (2015).
- *Press Releases:*  
“VLA Observatory Reveals Spectacular “Halos” of Spiral Galaxies” (2015);  
Surprising image of galaxy UGC 10288 and distant black hole with jets (2013);  
Hickson Compact Group 31: Interacting Galaxies Aglow with Millions of Young Stars (2010).  
Portfolio website: <http://www.physics.umanitoba.ca/~english/astroimages.html>
- *Hubble Heritage Project:*  
2000-2002 coordinated, authored website, guided visual direction, lead image-maker on some images.



**Hickson  
Compact  
Group 31**

**Cygnus Region** Made for  
CGPS from DRAO radio  
data & IRAS IR data.



**Some Favourite Publications**  
(\* indicates that I supervised the  
author.)

**Journal Articles:**

English J. (2016). ***Canvas and cosmos: Visual art techniques applied to astronomy data (An Invited Review)***. International Journal of Modern Physics D. 0(1730010): 53.

Wiegert T, Irwin J and 22 collaborators including English J. (2015). ***CHANG-ES. IV. Radio Continuum Emission of 35 Edge-on Galaxies Observed with the Karl G. Jansky Very Large Array in D Configuration— Data Release 1***. Astronomical Journal, 150(3): 81-103.

\*Wiegert T, English J. (2014). ***Kinematic Classification of Spiral Galaxies***. New Astronomy. New Astronomy, 26: 40-61.

Mullan B, Kepley A, Maybhate A, English J et al. (2013). ***Under Pressure: Star Clusters and the Neutral Hydrogen Medium of Tidal Tails***. The Astrophysical Journal. 768: 194-222.

Irwin, J, Krause, M, and English, J et al. (2013). ***CHANG-ES. III. UGC 10288 -- An Edge-on Galaxy with a Background Double-lobed Radio Source***. Astronomical Journal. 146: 164-181.

Irwin J, Beck R, Benjamin R, Dettmar R-J, English J et al. (2012). ***Continuum Halos in Nearby Galaxies: An EVLA Survey (CHANG-ES). II. First Results on NGC 4631***. The Astronomical Journal. 144: 52-64.

Irwin J, Beck R, Benjamin R, Dettmar R-J, English J et al. (2012). ***Continuum Halos in Nearby Galaxies: An EVLA Survey (CHANG-ES). I. Introduction to the Survey***. The Astronomical Journal. 144: 43-51.

English, J., Koribalski, B., Bland-Hawthorn, J., Freeman, K. C., and McCain, C. F. (2010), ***The Vela Cloud: A Giant H I Anomaly in the NGC 3256 GROUP***, The Astronomical Journal, 139: 102-119.

\*Asgekar A, English J, Safi-Harb S, and Kothes R. (2005), ***A Search for Narrow Vertical Structures in the Canadian Galactic Plane Survey***, The

Astronomical Journal, 130: 674-697.

\*West J, English J, Normandeau M, and Landecker T (2007), ***The Fragmenting Superbubble Associated with the H II Region W4***, The Astrophysical Journal, 656: 914-927.

Rector T, Levay Z, Frattare L, English, J., and Pu'uohau-Pummill, K. (2007), ***Image-Processing Techniques for the Creation of Presentation-Quality Astronomical Images***, The Astronomical Journal, 133: 598-611.

English J, Norris R, Freeman K, and Booth R. (2003), ***NGC 3256: Kinematic Anatomy of a Merger***, The Astronomical Journal, 125: 1134-1149.

English J and Freeman K. (2003), ***Giant H II Regions in the Merging System NGC 3256: Are They the Birthplaces of Globular Clusters?***, The Astronomical Journal, 125: 1124-1133.

English J, Taylor A R, Mashchenko S Y, Irwin J A, Basu S, and Johnstone D. (2000), ***The Galactic Worm GW 123.4-1.5: A Mushroom-shaped H I Cloud***, The Astrophysical Journal, 533: L25-L28.

#### **Conference Papers:**

\*Ferrand, G, English, J, Irani, P. (2016). ***3D visualization of astronomy data cubes using immersive displays***. arXiv:1607.08874. Canadian Astronomical Society (CASCA 2016)

English J, Fiege J, \*Wiegert T, Koribalski B, Kerzendorf W, Freeman K. (2010). ***The DiVA's Mask: Iconifying Galaxies and Revealing HI Anomalies***. Galaxies and their Masks. Galaxies and their Masks, Namibia (Springer). 105-111

Fluke C, English J, Barnes D. (2010). ***Visualization-Directed Interactive Model-Fitting to Spectral Data Cubes***. Astronomical Society of the Pacific Conference Series, Vol. 434. Astronomical Data Analysis Software and Systems XIX, Sapporo, Japan

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