

# ANN MCNAMARA, PH.D.

ann@viz.tamu.edu

Department of Visualization ◊ Texas A&M University

+1 979 324 3787

## EDUCATION

---

**University of Bristol, United Kingdom** 1996 - 2000  
Ph.D in Computer Science (Computer Graphics)

**University of Bristol, United Kingdom** 1993 - 1996  
Bachelor of Science in Computer Science (First Class Honors)

**University of Dublin, Trinity College, Dublin, Ireland** 2003 - 2003  
Masters of Arts in Education *jure officii*

## EXPERIENCE

---

**Associate Professor, Department of Visualization** 2013 - present  
*Texas A&M University* College Station, TX

- Associate Department Head (2016-2019)
- Graduate Programs Coordinator (2016-2019)

**Assistant Professor, Department of Visualization** 2008 - 2013  
*Texas A&M University* College Station, TX

**Assistant Professor, Department of Mathematics & Computer Science** 2003 - 2008  
*Saint Louis University* St. Louis, MO

**Full Faculty Member, Department of Computer Science** 2000 - 2003  
*University of Dublin, Trinity College* Dublin, Ireland

## SCHOLARSHIPS & AWARDS

---

**Presidential Impact Fellow** 2018  
*Texas A&M University* College Station, TX

**Distinguished Achievement Award (Teaching)** 2015  
*The Association of Former Students* College Station, TX

**Engineering & Physical Sciences Research Council Fellowship** 1996 - 2000  
*Ph.D. Scholarship* Bristol, UK

## MEMBERSHIPS

---

The Association for Computing Machinery (ACM), ACM CHI & ACM SIGGRAPH, SIGGRAPH, The Institute of Electrical and Electronics Engineers (IEEE) and IEEE Computer Society Member, The Society of Women Engineers (SWE)

## RESEARCH ACTIVITIES

---

### GRANTS

#### **THE NATIONAL SCIENCE FOUNDATION:NSF:FW-HTF-RM**

**Augmenting Spatial Cognition Capabilities of Future Workforce to Enhance Work Performance in Altered Environments Using Virtual Reality** *\$1,201,560*

The National Science Foundation NSF IIS--0917232

PI: Manish Dixit, co-PIs: Ann McNamara, Greg Chamitoff, Joseph Orr, Jyotsna Vaid *2019-2022*

#### **THE NATIONAL SCIENCE FOUNDATION CAREER AWARD:**

**Advancing Interaction Paradigms in Mobile AR using Eye Tracking** *\$539,862*

The National Science Foundation NSF IIS--1253432

PI: Ann McNamara *2013-2020*

#### **THE NATIONAL SCIENCE FOUNDATION:**

**Generating Animal Avatar Animation with Specific Identifiable Traits** *\$499,997*

The National Science Foundation NSF IIS--1016795

PI: Timothy McLaughlin, Co PI: Ann McNamara *2010-2014*

#### **THE NATIONAL SCIENCE FOUNDATION:**

**The Effect of Tiled Display on Performance in Multi--Screen Immersive Virtual Environments** *\$262,172*

The National Science Foundation NSF IIS--0917232

PI: Ann McNamara, Co PI: Frederic Parke *2008-2012*

### INTERNAL GRANTS

#### **TEXAS A&M UNIVERSITY:**

**Presidential Impact Award** *\$75,000*

PI: Ann McNamara *2018-2021*

#### **TEXAS A&M UNIVERSITY T3 TRIAD PROGRAM:**

**Walk A Mile In Their Shoes: Using Virtual Reality To Increase Empathy And Improve Transport Safety** *\$33,000*

Co-Is Tara Goddard (Architecture), Ranjana Mehta (Industrial & Systems Engineering) *2019-2021*

#### **TEXAS A&M UNIVERSITY TIER ONE PROGRAM (TOP):**

**SimCRAFT: A Virtual Design Platform for Experimental Learning and Collaborative Engineering Design** *\$300,000*

Replaced Eric Ragan after grant was awarded \$33,000 remaining

PIs: Gregory Chamitoff, Sharath Grimaji, Ann McNamara (replacing Ragan) *2017-2020*

### JOURNAL ARTICLES

Reynold Bailey, Ann McNamara, Nisha Sudarsanam, and Cindy Grimm. 2009. Subtle gaze direction. ACM Trans. Graph. 28, 4, Article 100, (September 2009), 1--14

Ann McNamara, Reynold Bailey, and Cindy Grimm. 2009. Search task performance using subtle gaze direction with the presence of distractions. ACM Transactions on Applied Perception, 6, 3, Article 17

(September 2009), 1--19

Ann McNamara, Exploring visual and automatic measures of perceptual fidelity in real and simulated imagery. *ACM Transactions on Applied Perception*, 3(3), (2006). 217--238

Ann McNamara. (2002), Visual Perception in Realistic Image Synthesis. *Computer Graphics Forum*, 20: 211--224

Ann McNamara, Alan Chalmers, Tom Troscianko, Iain Gilchrist. Comparing Real & Synthetic Scenes using Human Judgments of Lightness, *Rendering Techniques 2000*: 207--218

Ann McNamara, Alan Chalmers, Tom Troscianko, Erik Reinhard Fidelity of Graphics Reconstructions: A Psychophysical Investigation, *Rendering Techniques 1998*: 237--246

## CONFERENCE PROCEEDINGS

Hannah Park, Manish Dixit, Nafiseh Faghihi, Ann McNamara and Jyotsna Vaid, Understanding Spatial Abilities and Spatial Strategy Under Extreme Visual and Gravitational Environments, American Society of Civil Engineers (ASCE), Earth and Space Conference, 2020

Ann McNamara, Katherine Boyd, Joanne George, David Oh, Weston Jones, Annie Suther, Information Presentation in Augmented and Virtual Reality, 2019 IEEE Workshop on Perceptual and Cognitive Issues in AR (PERCAR), 2019.

Ann McNamara, 2018, Information Presentation in Virtual Reality, Grace Hopper Celebration of Women in Computer Science 2018, Houston, TX 2018.

Ann McNamara, Chethna Kabeerdoss 2018, Mobile Eye Tracking for Augmented Reality, Grace Hopper Celebration of Women in Computer Science 2018, Houston, TX 2018.

Ann McNamara, Chethna Kabeerdoss, and Conrad Egan. 2015. Mobile User Interfaces based on User Attention. In *Proceedings of the 2015 Workshop on Future Mobile User Interfaces (FutureMobileUI '15)*. ACM, New York, NY, USA

Danielle Ellyse Crowley, Robin R. Murphy, Ann McNamara, Tim D. McLaughlin, and Brittany Anne Duncan. 2014. AR browser for points of interest in disaster response in UAV imagery. In *CHI '14 Extended Abstracts on Human Factors in Computing Systems (CHI EA '14)*. ACM, New York

Ann McNamara, New Paradigms for Mobile Augmented Reality, Grace Hopper Celebration of Women in Computer Science, 2013

Thomas Booth, Srinivas Sridharan, Ann McNamara, Cindy Grimm, and Reynold Bailey. 2013. Guiding attention in controlled real-world environments. In *Proceedings of the ACM Symposium on Applied Perception (SAP '13)*

Donghui Han, Shu-wei Hsu, Ann McNamara, and John Keyser. 2013. Believability in simplifications of large scale physically based simulation. In *Proceedings of the ACM Symposium on Applied Perception (SAP '13)*. ACM, New York, NY, USA, 99--106.

Ann McNamara, Gaze informed View Management in Mobile Augmented Reality, *Proceedings of the SIGCHI Workshop on Gaze Interaction in a Post-WIMP world*. ACM, New York, NY, USA. 2013

Ann McNamara, Thomas Booth, Srinivas Sridharan, Stephen Caffey, Cindy Grimm, and Reynold Bailey. 2012. Directing gaze in narrative art. In *Proceedings of the ACM Symposium on Applied Perception, SAP 2012*. ACM, New York, NY, USA, 63--70

Reynold Bailey, Ann McNamara, Aaron Costello, Srinivas Sridharan, and Cindy Grimm. 2012. Impact of subtle gaze direction on short-term spatial information recall. In *Proceedings of the Symposium*

- on Eye Tracking Research and Applications (ETRA '12), Stephen N. Spencer (Ed.). ACM, New York, NY, USA, 67--74
- Srinivas Sridharan, Reynold Bailey, Ann McNamara, and Cindy Grimm. 2012. Subtle gaze manipulation for improved mammography training. In Proceedings of the Symposium on Eye Tracking Research and Applications (ETRA '12), Stephen N. Spencer (Ed.). ACM, New York, NY, USA, 74--82
- Ann M. McNamara. 2011. Enhancing art history education through mobile augmented reality. Proceedings of the 10th International Conference on Virtual Reality Continuum and Its Applications in Industry (VRCAI '11). ACM, New York, NY, USA, 507--512.
- Ann M. McNamara, Frederic Parke, and Mat Sanford. 2011. Evaluating performance in tiled displays: navigation and way finding. In Proceedings of the 10th International Conference on Virtual Reality Continuum and Its Applications in Industry (VRCAI '11). ACM, New York, NY, USA, 483--490
- Ann McNamara, View Management: Developing Eye--tracking Based Mobile Augmented Reality, In Proceedings of the 2011 10th IEEE International Symposium on Mixed and Augmented Reality (ISMAR '11). IEEE Computer Society, Washington, DC, USA, 1--6
- Srinivas Sridharan, Reynold Bailey, Ann McNamara, and Cindy Grimm. 2011. Subtle gaze manipulation for improved mammography training. Proceedings of the ACM SIGGRAPH Symposium on Applied Perception in Graphics and Visualization (APGV '11), Stephen N. Spencer (Ed.). ACM, New York, NY, USA, 112--120
- Meredith McLendon, Ann McNamara, Tim McLaughlin, and Ravindra Dwivedi. 2010. Using eye tracking to investigate important cues for representative creature motion. In Proceedings of the 2010 Symposium on Eye--Tracking Research, 38; Applications (ETRA '10). ACM, New York, NY, USA, 85--88
- Ann McNamara, Reynold Bailey, and Cindy Grimm. 2008. Improving search task performance using subtle gaze direction. In Proceedings of the 5th symposium on Applied perception in Graphics and Visualization (APGV '08). ACM, New York, NY, USA). 51--56
- Carol O'Sullivan, John Dingliana, Gareth Bradshaw and Ann Mc-- Namara , Eye--tracking for Interactive Computer Graphics, European Conference on Eye Movements (ECEM01) pp--S45, (2001)
- Tom Troscianko, Ann McNamara, Alan Chalmers, Measures of Lightness Constancy as an index to the perceptual fidelity of computer graphics., European Conference on Visual Perception 1998, Perception Volume 27 Supplement, 1998, 22--25
- Yann Morvan and Ann McNamara, Assessing the visual perception impact of indirect lighting. In Proceedings of the 2003 Eurographics Ireland Workshop. Eurographics Ireland 87--103
- Rachel McDonnell and Ann McNamara, Application of the Golden Ratio to 3D Facial Models, In Proceedings of the 2003 Eurographics Ireland Workshop. Eurographics Ireland 39--51 (Best Paper Award)
- Light and the Culture of Medieval Pottery, Ann McNamara, Alan Chalmers, Duncan Brown, In Proceedings of the International Conference on Medieval Archaeology, Brugge, Belgium, October 1997, 54--60

## **PEER REVIEWED COURSES**

Ann McNamara, Ranjana Mehta, 2020, Additional Insights: How to use Eye Tracking and Brain Sensing in Virtual Reality, ACM CHI Conference on Human Factors in Computing Systems, *to Appear*

Ann McNamara, Eakta Jain, 2019, Eye Tracking and Virtual Reality. In ACM SIGGRAPH ASIA 2019

Ann McNamara, Katerina Mania, 2014, Attention Aware Graphics in Rendering, Mobile and Games. In ACM SIGGRAPH 2014

Ann McNamara, A Very Basic Introduction to GLKit for iOS 5: Getting Up and Running, In ACM SIGGRAPH 2012 Studio Courses.

Ann McNamara, Katerina Mania, and Diego Gutierrez. 2011. Perception in graphics, visualization, virtual environments and animation. SIGGRAPH Asia 2011 Courses (SA '11). ACM, New York, NY, USA, Article 17, 137 pages

Ann McNamara, Katerina Mania, Marty Banks, and Christopher Healey. 2010. Perceptually Motivated Graphics, Visualization and 3D Displays. In ACM SIGGRAPH 2010 Courses (SIGGRAPH '10). ACM, New York, NY, USA, Article 7, 159 pages.

Ann McNamara, Alan Chalmers, Scott Daly, Karol Myszkowski, and Holly Rushmeier. 2001. Seeing is Believing: Reality Perception in Modeling, Rendering, and Animation, In ACM SIGGRAPH 2001 Courses (SIGGRAPH '00). ACM, New York, NY, USA, Article 44

Ann McNamara, Alan Chalmers, Scott Daly, Karol Myszkowski & Tom Troscianko. 2000. Image Quality Metrics. ACM SIGGRAPH 2000 Courses (SIGGRAPH 2000). ACM, New York, NY, USA, Art

## **OTHER INTERNATIONAL PEER REVIEWED WORK**

Ann McNamara, Angela Anderson, 2014, Ready, Steady, Siggraph. In ACM SIGGRAPH 2014 & 2015 Panels

Carol LaFayette, Fred Parke, Ann McNamara, and Philip Galanter. 2009. Im not there: extending the range of human senses to benefit wildlife corridors. In ACM SIGGRAPH 2009 Art Gallery (SIGGRAPH '09), Jacquelyn Martino (Ed.) ACM, New York, NY, USA, Article 23

Ann McNamara, Realism in Computer Graphics, ERCIM News, the publication of the European Research Consortium for Informatics and Mathematics: Special Theme: Computer Graphics & Visualization

## **PEER REVIEWED POSTERS**

Ann McNamara, Katherine Boyd, Joanne George, David Oh, Weston Jones, Annie Suther, Information Presentation in Augmented and Virtual Reality, 2019 IEEE Conference on Virtual Reality and 3D User Interfaces (VR), 1-2, 2019.

Ann McNamara, Somyung Oh, Sarah Suther, Katherine Boyd, and Ryan Sharpe. Using eye tracking to improve information retrieval in virtual reality. In Adjunct Proceedings of the IEEE International Symposium for Mixed and Augmented Reality 2018.

Mason Smith, Ann McNamara, Gaze Direction in a Virtual Environment Via a Dynamic Full-Image Color Effect M Smith, 2018 IEEE Conference on Virtual Reality and 3D User Interfaces (VR), 1-2, 2018.

## TEACHING

---

### TEACHING AREAS

Computer Science, Data Structures, Computer Graphics, 3D Computer Animation, 3D Modeling, Production Pipeline, Digital Lighting, Rendering and Shading, Game Design, Databases, Algorithms, Virtual Reality.

### COURSES AT TEXAS A&M

VIST 170, Introduction to Visualization Computing Environments. (0--2). Credit 1.

VIST 206, Visual Studies Studio II. (1--5). Credit 3.

VIST 270, Computing for Visualization I. (3--0). Credit 3.

VIST 271, Computing for Visualization I. (3--0). Credit 3.

VIST 271, Computing for Visualization II. (3--0). Credit 3.

VIST 305, Visual Studies Studio II. (1--5). Credit 3.

VIST 486, Introduction to Game Design (3--3). Credit 3.

VIZA 613, 3D Modeling and Animation (3--2). Credits: 4.

VIZA 616, Rendering and Shading (2--2). Credit: 3.

VIZA 627, Visual Communications III (2--2) Credit: 6.

VIZA 677, Virtual Reality (3--0) Credit: 3.

## SERVICE

---

### ACM SIGGRAPH

General Submissions Chair, ACM SIGGRAPH 2015

General Submissions Chair, ACM SIGGRAPH 2014

ACM SIGGRAPH General Submissions Juror, 2009, 2010, 2011, 2012, 2014, 2015

ACM SIGGRAPH Courses Chair 2012

ACM SIGGRAPH Courses Chair 2011

ACM SIGGRAPH Committee Member, 2012

ACM SIGGRAPH Committee Member, 2011

ACM SIGGRAPH Technical Paper Reviewer 2000 to 2013

ACM SIGGRAPH First Time Attendee Coordinator 2013

ACM SIGGRAPH ASIA Technical Paper Reviewer 2009, 2010, 2012

### ACM APPLIED PERCEPTION IN GRAPHICS & VISUALIZATION

Founding Co--Chair of the annual Symposium on Applied Perception in Graphics and Visualization (APGV), name changed to Symposium on Applied Perception in 2011.

## **THE NATIONAL SCIENCE FOUNDATION(NSF)**

Review Panelist, NSF Information and Intelligent Systems, Human Centered Computing

Review Panelist, American Society For Engineering Education NSF Graduate Research Program

Review Panelist, NSF Career Award Review Panelist, NSF Curriculum, Laboratory Improvement Program

## **SCHOLARLY REVIEWING & INTERNATIONAL PROGRAM COMMITTEES**

International Program Committee Member, Augmented and Virtual Reality, Grace Hopper Celebration 2019

International Program Committee Member, IEEE ISMAR 2014, 2017, 2018, 2019

Co Chair of the Eye Tracking Research & Applications Doctoral Symposium 2019, 2020

International Program Committee Member, Human Computer Interaction, Grace Hopper Celebration 2018, 2019

International Program Committee Member, Expressive, 2016, 2017, 2018

General Submissions Chair, ACM SIGGRAPH 2014, 2015

Chair, Gaming, Computer Graphics, Animation (GFX) track, Grace Hopper Conference 2014

International Program Committee Member, Eurographics 2014

International Program Committee Member, Eurographics 2013

International Program Committee Member, Media and Entertainment, Grace Hopper Celebration 2013

International Program Committee Member, ACM Expressive (Formally NPR, Computational Aesthetics) 2013

International Program Committee Member, ACM Symposium on Applied Perception (SAP,formerly APGV)

International Program Committee Member, IASTED International Conference on Graphics & Virtual Reality

International Program Committee Member, ACM Eye Tracking Research and Applications (ETRA)

International Program Committee Member, Computational Aesthetics (CAe) 2009, 2010, 2011, 2012

International Program Committee Member, Eurographics (Short Papers Program) 2008, 2009

Reviewer for IEEE Transactions On Graphics, IEEE Transactions on Visualization and Computer Graphics, Presence, ACM Computer Human Interaction