

II. MATERIAL PREPARED BY THE CANDIDATE

A. PERSONAL

A.1 Name.

Jeffrey Paul Youngblood

A.2 Degrees.

1996 B.Sc. Chemistry and Physics Louisiana State University (Double Major)

2001 Ph.D. Polymer Sci. and Eng. University of Massachusetts-Amherst
Dissertation: *"Wettability of Polymer Surfaces: Effects of Chemistry and Topography."*
Advisor: *Thomas J. McCarthy*

A.3 Positions at Purdue.

2003-2009 Assistant Professor, School of Materials Engineering, Purdue University, West Lafayette, IN

2009-2015 Associate Professor, School of Materials Engineering, Purdue University, West Lafayette, IN

2015-present Professor, School of Materials Engineering, Purdue University, West Lafayette, IN

A.4 Positions at other institutions or organizations.

1994-1995 Cooperative Student Researcher, Aluminas Division, LaRoche Industries, Baton Rouge, LA

1995-1996 Junior Scientist, Fluorocarbons Division, LaRoche Industries, Baton Rouge, LA

2001-2003 Postdoctoral Research Associate, Materials Science and Engineering, Cornell University, Ithaca, NY

A.5 Licenses, registrations, and certificates.

none

B. PROFESSIONAL OBJECTIVES

B.1 Candidate's own statement of professional objectives and contributions.

B.2 Honors and awards.

1991 LSU Alumni Association Scholarship

1991 DuPont Scholarship

1996 LSU Outstanding Senior in Physics

1996 LSU Outstanding Senior in Chemistry

2001 Omnova Solutions Signature University Award for Graduate Research

2002 3rd Prize, Cornell Materials Science and Engineering Advisory Board Poster Contest

2005 Paraffin Safety Association Competition *Finalist* "Design and Demonstration of Firesafe Kerosene Stove" with McLothlin, Visser, Leaird. (no winner was declared)

2007 National Science Foundation Travel Fellowship to the 10th European Ceramics Society meeting, Berlin, Germany June 17-21 and subsequent industrial/university interaction.

2020 Purdue College of Engineering Graduate Student Awards - Outstanding Faculty Mentor Award

2020 Purdue College of Engineering and Office of Technology Commercialization Most Impactful Faculty Inventors in Fiscal Year 2019

B.3 Memberships in academic, professional and scholarly societies.

- American Chemical Society – member (Polymer Chemistry Division, Polymeric Materials Science and Engineering Division, Colloid and Surface Division), Polymer Chemistry Division Membership Committee ('05-'10), Polymer Chemistry Division Membership Committee Chair ('07-'10), Polymer Chemistry Division Programming chair ('12-'14)
- Materials Research Society – member (2003-2013)
- ICE- member (2018-present)
- ACerS- member (2018-present)
- AAAS-member (2018-present)

C. TEACHING

C.1 Candidate's own statement of contributions to teaching.

C.2 New courses introduced at Purdue.

- MSE 547 Introduction to Surfaces, Revived Fall 2007 (had not been taught for 15 years), Taught Fall 2007 (18 students), Fall 2009 (32 students), Spring 2011 (17 students), Fall 2013 (35 students), Fall 2015 (39 students), Fall 2017 (32 students). Only ~ ½ of the students are from MSE.
- MSE 497Y/IDE 495B Manufacture and Assembly, Introduced Spring 2006, Taught Spring 2006 (9 students), Spring 2007 (7 students).
- MSE 567 Polymer Synthesis, Introduced Fall 2004, Taught Fall 2004 (25 students), Fall 2006 (17 students), Spring 2008 (16 students), Spring 2010 (15 students), Spring 2012 (29 students), Spring 2014 (22 students), Spring 2016 (21 students), Spring 2018 (31 students). About 1/3 MSE, the rest from BME, ChemE, IPPH, and Chemistry.
- MSE 525 Structure-Property Relationships in Engineering Polymers. Complete overhaul of course from an "Introductory Polymer" course to a "Polymer Physics course" due to both a requirement of an UG-level organic materials course and introduction of a "sister" course on polymer mechanical and rheological properties. This revised course was introduced Spring 2019.

C.3 Courses taught at Purdue (semester, # students, % responsibility)

- MSE335 Materials Characterization Lab: F11, 39 students, 33%
- MSE367 Materials Processing Lab: S11, 43 students, 33%; S12, 44 students, 33%; S15, 48 students; F18, 31 students 33%
- MSE547 Introduction to Surface Science: S11, 17 students, 100%; F13, 35 students, 100%; F15, 39 students; F17, 32 students, 100%.
- MSE597Y/567 Polymer Synthesis: S12, 29 students, 100%; S14, 22 students, 100%; S16, 21 students; S18, 31 students 100%.
- MSE430/MSE440 Senior Design: F16, 45 students, 50%, S17, 45 students, 50%.

C.4 Teaching scores summary table for last 5 years.

The scores below are on a 5.0 base with 5 as the highest and 1 as the lowest for the most recent 3 teaching years. Prof. Youngblood was on sabbatical for the 2012-2013 school year.

SEM	COURSE TITLE	COURSE NUMBER	# OF RESPONSES/ # IN COURSE	COURSE EVAL SCORE (class activities)	PROF EVAL SCORE (clear explanation)	AVG* DEPT PROF SCORE
S15	Materials Processing Lab	MSE367	/48	3.8	3.6	
F15	Introduction to Surface Science	MSE547	16/39	4.4	4.5	
S16	Polymer Synthesis	MSE567	6/21	3.8	4.0	
F16	Senior Design	MSE430	19/45	3.7	3.9	
S17	Senior Design	MSE440-1	16/30	3.8	3.9	
S17	Senior Design	MSE440-2	8/15	4.3	4.5	
F17	Introduction to Surface Science	MSE547	16/32	4.7	4.8	
S18	Polymer Synthesis	MSE567	11/31	4.6	4.8	

F18	Materials Processing Lab	MSE367	10/31	3.9	4.0	
S19	Structure-Property Relationships of Engineering Polymers	MSE525	16/24	4.5	4.6	
F19	Introduction to Surface Science	MSE547	12/33	4.5	4.6	
S20	Structure-Property Relationships of Engineering Polymers	MSE525	13/30	4.6	No question	
F20	Materials Processing Lab	MSE367	11/29	4.1	4.0	

***Department average professor scores are calculated over all undergraduate (1XX-4XX) or all graduate (5XX-6XX) classes taught in the years under consideration: 2010-2014**

C.5 Ph.D and M.S. thesis committees chaired. (4 MS: 25 PhD; 16 graduated/13 in progress)

NAME	DEGREE	GRADUATION DATE	NAME OF CO-CHAIR	TITLE	RELATED PUBLICATIONS
Philippe H. Sellenet	MS	12/2004		Hydrophilized Bactericidal Polymers	E.1:6; F.2:1
Bradley Allison	MS	05/2007		Synthesis, Characterization, and Biocompatibility Studies of N-Hexylated Pyridinium Antimicrobial Copolymers	E.1:6,9,19
Benjamin M. Eick	PhD	05/2008		Electrospinning of Ceramic Nanofibers	E.1:15,16
John Howarter	PhD	11/2008		Stimuli-Responsive Fluorinated Poly(ethylene glycol) Surfaces as Oil-Repellant Self-Cleaning Anti-Fog Materials	E.1:5,8,10,12,14, 19, 23;
Thomas Stratton	PhD	12/2009		Investigation of Bactericidal Polymers	E.1:17,18,19,20, 21; F.2:1
Alex Riesing	MS	10/2010	Robert Moon, FPL/MSE	Cellulose Nanocrystal Composite Manufacture	E.1: 25; E.4:4, F.2:4,7
Manuel Acosta	PhD	12/2011	Rodney Trice, MSE	Design and Manufacture of Ultra-High Temperature Ceramics with Oriented Strengthening and Toughening Phases	E.1:26,65

Jui-Hsun (nee Hsiao-Chun) Lu	PhD	05/2012		Development of UV-Curable Adhesives for Field-Level Composite Repair	E.1: 43
Valerie Wiesner	PhD	12/2013	Rodney Trice, MSE	Injection Molding of Ceramic Suspension Gels at Room Temperature for the Production of Ultra-High Temperature Ceramics	E.1:26,29,44,65;
Jen-Chieh Liu	PhD	07/2014	Robert Moon, FPL/MSE	Nanofibrillated Cellulose Laminate Composites	E.1:27,30,31,40, 41; E.3:1,4; E.4:4; F.2:3
Yizheng Cao	PhD	12/2014	Robert Moon FPL/MSE, Jason Weiss CIVL, Pablo Zavattieri CIVL	The Effect of Nanocellulose on the Properties of Cement	E.1:38,47,49; E.3: 3
Si Chen	PhD	05/2015	Byron Pipes, MSE/AAE/ ChemE, Robert Moon, FPL/MSE	Dry- and Wet-Spun Fibers from Cellulose Nanomaterials	E.1:33
Jairo Diaz Amaya	PhD	05/2015	Robert Moon, FPL/MSE	Thermophysical Properties of Cellulosic Nanomaterials	E.1:28,32,36,42,48, 57 ; E.2:4; E.3:2
Colton Steiner	PhD	05/2015	Carlos Martinez, MSE	Microfluidic Processing of Acoustic Metamaterials	
Shane Peng	PhD	07/2016	Robert Moon, FPL/MSE	Fabrication and Characterization of Cellulose Nanocrystal Enhanced Sustainable Polymer Nanocomposites Through Surface Chemistry and Processing	E.1:34,46,55,56,58;
Gamini Mendis	PhD	05/2017	John Howarter, MSE/EEE	Sustainable Flame Retardants for Microelectronics	E.1:37,53,72, 86; F.2:6
Youngman Yoo	PhD	07/2017		Synthesis and Characterization of	E.1:45,54,56,62,67; F.2:9

				Hydrophobized Cellulose Nanocrystal Enhanced Sustainable Polymer Composites via Capsule and Coat Processing	
Lisa Rueschhoff	PhD	05/2017			E.1:44,50,51,52,59,61
Andres Diaz Cano	PhD	05/2017	Rodney Trice, MSE	Boron Carbide: Stabilization of Highly-Loaded Aqueous Suspensions, Pressureless Sintering, and Room Temperature Injection Molding	E.1:44,51,64
Francisco Montes Montejo	PhD	12/2018		Adsorption and Dispersant Behavior of Cellulose Nanocrystals for Inorganic Particles	E.1:66,75,77,88,93,95,96
Shikha Shrestha	PhD	05/2019		Spinning of Cellulose Nanocrystal Polymer Nanocomposite Fibers	E.1:55,56,57,75,88,91
Marianne Valone	MS	05/2016		Effect of Humidity on the Creep Response of Cellulose Nanocrystal Films	
Reaz Chowdhury	PhD	05/2019		Roll-to-Roll Processing of Cellulose Nanocrystal Laminates	E.1:58,69,76,77,78,81,88,91,95,96,106,109; E.2:5
Kyungho Kim*	PhD	05/2019	Vilas Pol, CHE (MSE courtesy); Sebastian Osswald*	Sodium Battery Anodes from Sustainable Biomass Sources	E.1:65,70,73,109
Satish Kumar	PhD	12/2019	John Howarter, MSE/EEE	Industrially Viable Anti-ice Coatings for Power Line Applications	
Caitlyn Clarkson	PhD	05/2020		Spinning of Cellulose Nanocrystal Polymer Nanocomposite Fibers	E.1:68,69,76,77,78,87,90,91,97

Matthew Korey	PhD	05/2020	John Howarter, MSE/EEE	Sustainable Flame Retardants for Microelectronics	E.1:53,71,72,103,108
Andrew Schlup	PhD	05/2020	Rodney Trice, MSE	Processing of Dense Oriented Platelet Alumina	E.1:94,104
Muhammed (Md) Nuruddin	PhD	05/2020	John Howarter, MSE/EEE	Analysis of Curing, Properties and Degradation of CIPP Polyester and Epoxy Resin	E.1:63,76,77,79,82,86,89,95,96,99,100,102; E.4:7
Mohamadreza Moini (CIVL)	PhD	07/2019	Pablo Zavattieri, CIVL; Jan Olek, CIVL	Additive Layer Manufacturing of Cementitious Materials	E.1:74, E.3:6
Erich Weaver	PhD	Current, Expected 08/2021	Rodney Trice, MSE	Low-Cost Boron Carbide Processing for Ballistic Materials	
William Costakis	PhD	05/2020	Rodney Trice, MSE	Processing of Dense Oriented Platelet Alumina	E.1:50,51,94,104,105
Endrina Forti	PhD	Current, Expected 05/2021		Roll-to-Roll Processing of Tempo-Oxidized Cellulose Nanofibrils Laminates	E.1:89,97,101
Sami El Awad Azrak	PhD	Current, Expected 05/2021		Roll-to-Roll Processing of Mechanically Fibrillated Cellulose Nanofibril Laminates	E.1:78,87,89,90,91,97,105
Tess Marconie	PhD	Current, Expected 08/2022	Rodney Trice, MSE	Advanced Manufacturing of Boron Carbide and Silicon Carbide	
Anthony Becerril	MS	12/2020		Investigation of Cellulose Nanocrystals (CNC) as an Additive to Cement	
Olivia Brandt	PhD	Current, Expected 2023	Rodney Trice, MSE	Extruded Silicon Carbide High Efficiency High Temperature Supercritical CO2 Heat Exchangers for Turbine Engines	
Rodrigo Orta Guerra	PhD	Current, Expected 2023	Rodney Trice, MSE	Extruded Silicon Carbide High Efficiency High	

				Temperature Supercritical CO2 Heat Exchangers for Turbine Engines	
Kyle Cox	MS	Current, Expected 12/2021	Rodney Trice, MSE	Additive Layer Manufacturing of SiC/SiC Composites	
Jingxuan Zhang	PhD	Current, Expected 08/2024		Understanding High Friction Surface Treatment Binder for Asphalt Pavements	
Ashwin Sivakumar	MS	Current, Expected 05/2022	Rodney Trice, MSE	Hot-Pressing of Transparent Alumina Windows for Hypersonics	

* This student's original advisor left Purdue and as such Prof. Youngblood "co-advised" so that the student would finish his PhD work. This idea was not original to Youngblood.

C.6 Mentoring of postdoctoral and visiting scholars

NAME	LAST DEGREE/ DATE	PRIOR AFFILIATION	POSITION TITLE/ DATES	PROJECT TITLE	RELATED PUBLICATIONS
Erika Pedraza	MS/2006	Akron University	Post-Masters Researcher 01/01/06 – 12/31/2006	Adhesive Bonding of Copper Water Tubing	E.1:13
Kirsten Gensen	PhD/2008	Iowa State University	Postdoctoral Researcher 01/01/2009-03/01/2011	Amphiphilic Polymers for Anti-fogging and Easy-Rinse Coatings	E.1: 23
Julia Braun	BS-equivalent/ 2013	Ecole Polytechnique Federale de Lausanne, CH	Visiting Scholar before Diplom 03/01/2014-06/30/2014	Control of Photonic Properties of Cellulose Nanocrystals	E.1: 42
Vitus Apalangya	PhD	University of Ghana, Legon	Visiting Professor 10/2017-12/2017	Fabrication of Modified Cellulose Nanocrystal Biodegradable Nanocomposite Plastic Films for Packaging Applications	E.1: 77
Kazim Kose	PhD	Hitit University, Corum, Turkey	Visiting Professor 07/2018-04/2019	Bioadsorbents from Nanocellulose Containing Cryogels	E.1:98,99
Muhammad Naveed Kahn	BS	University of the Punjab, New Campus, Lahore	Visiting PhD Scholar	Cellulose Nanocrystal Composite Coatings.	

C.7 Undergraduate special projects directed.

- 1 Kei Yamamoto (MSE), Spring 2004, *Bactericidal Surfaces*
- 2 Allen Mackey (MSE), Spring 2004, *Electrospun Polymers*;
- 3 Alicia Certain (Purdue University) REU 2004, *Surface Modification of Biomass Polymers*
- 4 Allen Mackey (Purdue University), SURF 2004, *Electrospinning of Polymer Blends*
- 5 Kendra Erk (Purdue University), REU 2004, *Electrospinning of Conducting Polymer Blends*
- 6 Allen Mackey (MSE), Spring 2005, *Morphology of Electrospun Polymer Blends*
- 7 Andrew Ziegler (Michigan Technological University), REU 2005, *Multilayer Metal/Ceramic Laminates for Ballistic Purposes*
- 8 Emily Norvell (California Polytechnic State University at San Luis Obispo), REU 2005, *Silica Aerogel/Metal Composites by Electroless Deposition (w/ Trumble)*
- 9 Nasser Al-Mufahli (Imperial College, U.K.), Exchange 2005, *Carbon Aerogel/Metal Composites by Electrodeposition (w/ Trumble)*4 John Lingeman (MSE), Fall 2005, *Semiconducting Nanofibers*

- 10 Katherine Frank (MSE), Fall 2005, *Alumina Nanofibers*
- 11 Katherine Frank (MSE), Spring 2006, *Alumina Nanofibers*
- 12 Lazo Trkulja (MSE), Spring 2006, *New Processes to Ceramics*
- 13 Eleanor Gamble (MSE), Spring 2006, *Metal/Aerogel Pseudofoams*
- 14 Jessica Van Dalen (Purdue University), 2006 *Anaerobic Adhesive Formulations for Copper Tubing Joining (w/ Pipes) (Sponsored by Mueller Industries)*
- 15 Katherine Frank (Purdue University), SURF 2006, *Anaerobic Adhesive Formulations for Copper Tubing Joining/Alumina Nanofibers. (Sponsored by Mueller Industries)*
- 16 Jessica Van Dalen (MSE), Fall 2006, *Anaerobic Adhesive Formulations for Copper Tubing Joining*
- 17 Grayce Theryo (MSE), Fall 2006, *Activity of New Bactericidal Polymers.*
- 18 Arjun Ishwar (BME), Fall 2006, *Hemocompatibility of New Bactericidal Polymers.*
- 19 Arjun Ishwar (BME), Spring 2007, *Hemocompatibility of New Bactericidal Polymers.*
- 20 Katherine Frank (MSE), Spring 2007, *Anaerobic Adhesive Formulations for Copper Tubing Joining. (sponsored by Mueller Industries)*
- 21 Jessica Van Dalen (MSE), Spring 2007, *Anaerobic Adhesive Formulations for Copper Tubing Joining.*
- 22 Grayce Theryo (MSE), Spring 2007, *Synthesis of Degradable Bioactive Polymers.*
- 23 Sarah Ollila (MSE), Spring 2007, *Electrospinning of Superconducting YBCO Nanofibers.*
- 24 Lachlan Badger (Australia), Exchange 2007, *New Adhesive Promoters/Conducting Oxide Nanofibers*
- 25 Brian Ginn (Purdue University), SURF 2007, *Ultra-High Temperature ZrB₂ Investigation*
- 26 Jason Steill (MSE), Fall 2007, *Electrospinning of Semiconducting Nanofibers*
- 27 Jenny Kuo (MSE), Fall 2007, *Direct Write Nanostructures via Hot-Probe AFM*
- 28 Brian Ginn (MSE), Fall 2007, *Ultra-High Temperature ZrB₂ Investigation*
- 29 Lachlan Badger (Australia), Fall 2007, *Superconducting Oxide Nanofibers*
- 30 John Brennan (MSE), Fall 2007, *Hemocompatibility of Polymers*
- 31 Jason Steill (MSE), Spring 2008, *Electrospinning of Semiconducting Nanofibers*
- 32 Jenny Kuo (MSE), Spring 2008, *Direct Write Nanostructures via Hot-Probe AFM*
- 33 John Brennan (MSE), Spring 2008, *Hemocompatibility of Polymers*
- 34 Heather Murdoch (MSE), Spring 2008, *Hemocompatibility of Quat Polymers and Green Polymer Synthesis*
- 35 Laura Managan (EnE), Spring 2008, *Micro- and Nano-Patterning for Superhydrophobic and Gecko-Adhesive Surfaces*
- 36 Anna Holt (MSE), Spring 2008, *Biomimetic Ceramic Composites*
- 37 Jason Steill (Purdue University), SURF 2008, *New Fabrication Techniques for Metal Carbide Fibers Using Mesophase Pitch*
- 38 Justin Jennings (Purdue University), SURF 2008 (with Robert Moon), *Cellulose Nanocrystal Composites*
- 39 Kyle Fezi (Purdue University), SURF 2008 (with Rodney Trice), *Tape Casting of Oriented Fiber Composites by Ceramic Suspension Gel Processing (CERASGel).*
- 40 Jonothan Busch (Purdue University), SURF 2008 (with Rodney Trice), *Tape Casting of Oriented Fiber Composites by Ceramic Suspension Gel Processing (CERASGel).*²⁹ Rachel Wilson Tilton (MSE), Fall 2008, *Optimization of Polymeric Biocides*
- 41 Michelle Haby (West Lafayette, Jefferson H.S.), Summer 2008 (with Rodney Trice), *Injection Molding of Ceramic Suspension Gels (CERASGel)*
- 42 Michelle Haby (West Lafayette, Jefferson H.S.), Fall 2008 Funded by NSF (with Rodney Trice), *Injection Molding of Ceramic Suspension Gels (CERASGel)*
- 43 Jenny Kuo (MSE), Fall 2008, *Direct Write Nanostructures via Hot-Probe AFM*
- 44 Jason Steill (MSE), Fall 2008, *Electrospinning of Semiconducting Nanofibers*
- 45 John Brennan (MSE), Fall 2008, *Hemocompatibility of Polymers*
- 46 Andrew Kremmel (MSE), Fall 2008, *Synthesis of Itaconic Acid-Based Polymers*

- 47 Alex Olp (MSE), Fall 2008, *Field-Level Repair of Carbon Fiber Composite*
- 48 Joeseoph Muth (EnE), Fall 2008, *Field-Level Repair of Carbon Fiber Composite*
- 49 John Bortell (MSE), Fall 2008, *Cellulose Nanocrystal Processing for High Strength Fibers and Composites*
- 50 Michael Johnston (MSE), Fall 2008, *Cellulose Nanocrystal Processing for High Strength Fibers and Composites and lots o' projects*
- 51 Steve Milanoski (MSE), Fall 2008, *Biomimetic Ceramic Composites (Artificial Nacre)*
- 52 Steve Milanoski (MSE), Spring 2009, *Biomimetic Ceramic Composites (Artificial Nacre)*
- 53 Michelle Haby (West Lafayette, Jefferson H.S.), Spring 2009 (with Rodney Trice), *Injection Molding of Ceramic Suspension Gels (CERASGel)*.
- 54 John Bortell (MSE), Spring 2009, *Cellulose Nanocrystal Processing for High Strength Fibers and Composites*
- 55 Ben Orkiszewski (EnE), Spring 2009, *Poly(phosphoric acid) Based Fuel Cell Membranes*
- 56 Joseph Fiacco (MSE), Summer 2009, *Optically Transparent Fiberglass Composites for Ballistic Windows*.
- 57 John Bortell (Purdue University), 2009 (with Robert Moon), *Cellulose Nanocrystal Processing for High Strength Fibers and Composites*
- 58 Amanda Cooper (Purdue University), SURF 2009, *Field-Level Repair of Carbon Fiber Composite*
- 59 Elgin Miller (Purdue University), SURF 2009 (with Rodney Trice), *Injection Molding of Ceramic Suspension Gels (CERASGel)*
- 60 Joseph Fiacco (MSE), Fall 2009, *Optically Transparent Fiberglass Composites for Ballistic Windows*.
- 61 Nick Clore (MSE), Fall 2009, *Aerogel Nanocomposites*
- 62 Amanda Cooper (MSE), Fall 2009, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 63 Jamie Burdeski (MSE), Fall 2009, *Cellulose Nanocrystal (CNC) Polyolefin Composites*
- 64 John Bortell (MSE), Fall 2009, *Cellulose Nanocrystal Processing for High Strength Fibers and Composites*
- 65 Nathan Winning (MSE), Fall 2009, *Acoustic Metamaterials*
- 66 Amanda Cooper (MSE), Spring 2010, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 67 Joseph Muth (MSE), Spring 2010, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 68 John Bortell (MSE), Spring 2010, *Cellulose Nanocrystal Processing for High Strength Fibers and Composites*
- 69 Kyle Patterson (MSE), Spring 2010, *Shear-thickening Dilatent Ceramic Gels for Armor Applications*
- 70 Kris Thomas (MSE), Spring 2010, *Shear-thickening Dilatent Ceramic Gels for Armor Applications*
- 71 Gamini Mendis (MSE), Spring 2010, *Shear-thickening Dilatent Ceramic Gels for Armor Applications*
- 72 Sean Sullivan (MSE), Spring 2010, *Shear-thickening Dilatent Ceramic Gels for Armor Applications*
- 73 Nathan Plag (MSE), Spring 2010, *Shear-thickening Dilatent Ceramic Gels for Armor Applications*
- 74 Nick Heymer (MSE), Spring 2010, *Optically Transparent Fiberglass Composites for Ballistic Windows*.
- 75 Isaac Payne (MSE), Spring 2010, *Mechanical Metamaterials for Impact Mitigation*
- 76 John Smith (MSE), Summer 2010, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 77 Evan Anderson (Purdue University), SURF 2010 (with Rodney Trice), *Shear Thickening CeraSGel Materials*
- 78 Bartek Polomski (Imperial College, U.K.), Exchange 2010 (with Robert Moon), *Electrically Oriented Cellulose Nanomaterials*

- 79 Nick Heymer (MSE), Fall 2010, *Optically Transparent Fiberglass Composites*
- 80 Jessicka Jones (MSE), Fall 2010, *Optically Transparent Fiberglass Composites*
- 81 Isaac Payne (MSE), Fall 2010, *Mechanical Metamaterials for Impact Mitigation.*
- 82 Evan Anderson (MSE), Fall 2010, (with Rodney Trice) *Shear Thickening CeraSGel Materials*
- 83 Emily Deutch (EnE), Fall 2010 (with Rodney Trice) *Renewable Composites from Corn*
- 84 Joseph Muth (MSE), Summer 2010, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 85 John Smith (MSE), Fall 2010, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 86 Jacob Garves (EnE), Fall 2010 (with Rodney Trice) *Renewable Composites from Corn*
- 87 John Smith (MSE), Spring 2011, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 88 Logan Kearney (MSE), Spring 2011, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 89 Zhenyu Bo (MSE), Spring 2011, *P-glass polymer composites*
- 90 Joel Davis (MSE) Spring 2011, *Nacreous Composites.*
- 91 Keith Morrison (Purdue University), 2011 (with Kevin Trumble), *High Temperature Coatings for Powder Processed Iron Particles*
- 92 Rebecca George (Purdue University) 2011 (with Rodney Trice), *Cerasgel Casting of Turbine Blades*
- 93 Joel Davis (MSE) Fall 2011, *Nacreous Composites*
- 94 Tian Qiu (MSE) Fall 2011, *P-glass polymer composites*
- 95 Logan Kearney (MSE), Fall 2011, *Field-Level Repair of Carbon Fiber Composite (Sponsored by CACI International)*
- 96 Taeyong Ahn (MSE), Fall 2011, *Cellulose Nanoparticle Gels*
- 97 Zaixing Zhu (MSE), Fall 2011, *Kevlar Al/Mg Composites*
- 98 Rebecca George (MSE), Fall 2011, *CeraSGel Composites*
- 99 Rebecca George (MSE), Spring 2011, *CeraSGel Composites*
- 100 Taeyong Ahn (MSE), Spring 2012, *Cellulose Nanoparticle Gels*
- 101 Emily Anthon (MSE), Spring 2012, *Extrusion of Alumina Gels*
- 102 Matthew Lancaster (MSE), Spring 2012, *Modeling Bacterial Population Dynamics in Solution*
- 103 Briana Owens-Boatwright (MSE), Spring 2012, *Analysis of Nanocellulose/Nanoparticle Composites*
- 104 Joel Davis (MSE) Spring 2012, *Nacreous Composites*
- 105 Alison Gatons (MSE), Spring 2012, *Lignin/Urea-Formaldehyde Blends for Use in Wood Bonding*
- 106 Hamsini Gopalakrishina (MSE), Spring 2012, *Electrospinning of Cellulose Nanofibril Composite Nanofibers*
- 107 Jake Garves (MSE), Spring 2012, *Polymer Coating for Hot Corrosion (w/ Trice)*
- 108 Elizabeth Deutsch (MSE), Spring 2012, *Polymer Coating for Hot Corrosion (w/ Trice)*
- 109 Hamsini Gopalakrishina (MSE), Fall 2012, *Electrospinning of Cellulose Nanofibril Composite Nanofibers*
- 110 Rose Galley (MSE), Fall 2012, *Crystallinity of Nanocellulose Polymer Blends*
- 111 John Piccone (MSE), Fall 2012, *Surface Modification of HDPE.*
- 112 Rose Galley (MSE), Fall 2013, *Crystallinity of Nanocellulose Polymer Blends*
- 113 John Piccone (MSE), Fall 2013, *Surface Modification of HDPE.*
- 114 Anna Knowles (ChemE), Fall 2013 (with Boudouris), *Synthesis of Itaconic Acid Based Polymers*
- 115 Dominic Hurley (Chem), Fall 2013, *Synthesis of Itaconic Acid Based Polymers*
- 116 Rose Galley (MSE), Spring 2014, *Crystallinity of Nanocellulose Polymer Blends*
- 117 John Piccone (MSE), Spring 2014, *Surface Modification of HDPE.*
- 118 Hamsini Gopalakrishna, Spring 2014, *Synthesis of Itaconic Acid Based Polymers*
- 119 Dominic Hurley (Chem), Spring 2014, *Synthesis of Itaconic Acid Based Polymers*
- 120 Matthew Mitchie (MSE), Spring 2014, *3-D Printing of Ceramics. (w/ Trice)*
- 121 John Epling (MSE), Fall 2014, *Hygroscopic Expansion Measurements in Nanocellulose*

- 122 Matthew Mitchie (MSE), Fall 2014, *3-D Printing of Ceramics (w/ Trice)*
- 123 Theresa Saenz (MSE), Fall 2014, *Transesterification of CNCs with Biodiesel and Natural Oils*
- 124 Haojie Xie (MSE), Fall 2014, *Columnation of Recycled Carbon Fiber Preforms*
- 125 Isabella Ramirez (MSE), Fall 2014, *3-D Printing of Ceramics (w/ Trice)*
- 126 Fan Zhang (MSE), Fall 2014, *3-D Printing of Ceramics (w/ Trice)*
- 127 William Costakis (MSE), Fall 2014, *3-D Printing of Ceramics (w/ Trice)*
- 128 Rose Galley (MSE), Fall 2014, *Crystallinity of Nanocellulose Polymer Blends*
- 129 John Epling (MSE), Spring 2014, *Hygroscopic Expansion Measurements in Nanocellulose*
- 130 Matthew Mitchie (MSE), 2014, *3-D Printing of Ceramics.*
- 131 Alicia McEachen (West Lafayette, Jefferson H.S.), Fall 2014 (with Rodney Trice), *3-D Printing of Ceramic Suspension Gels (CERASGel).*
- 132 Alicia McEachen (West Lafayette, Jefferson H.S.), Spring 2015 (with Rodney Trice), *3-D Printing of Ceramic Suspension Gels (CERASGel).*
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- 135 William Costakis (MSE), Spring 2015, *3-D Printing of Ceramics (w/ Trice)*
- 136 William Costakis (MSE), Summer 2015, *3-D Printing of Ceramics (w/ Trice)*
- 137 Alyssa Bass (CHE), Summer 2015, *Control of Porosity in Hydrogels*
- 138 Alyssa Bass (CHE), Fall 2015, *Control of Porosity in Hydrogels*
- 139 Jeier Yang (MSE), Fall 2015, *Control of Porosity in Hydrogels*
- 140 Sarah Port (MSE), Fall 2015, *Properties of CNC Films*
- 141 Matt Grindle (Chem), Fall 2015, *TEMPO-oxidation of CNF*
- 142 Sarah Port (MSE), Spring 2016, *Properties of CNC Films*
- 143 Jiamen He (MSE), Spring 2016, *Composite Graphene Battery Electrodes*
- 144 Zhenhan Hu (MSE), Summer 2016, *Epoxy Nanocomposites*
- 145 Nikita Guarav (MSE), Fall 2016, *Synthesis of Chitin Nanocrystals*
- 146 William S. Morton (MSE), Fall 2016, *Synthesis of Chitin Nanofibrils*
- 147 Austin Beggs (MSE), Fall 2016, *Synthesis of TEMPO modified Cellulose Nanocrystals*
- 148 Christiana Pavlick (MSE), Summer 2017, *Reducing Porosity in Ceramic Slurries*
- 149 Sam Cleveland (MSE), Summer 2017, *Additive Layer Manufacturing of Ceramics*
- 150 Andrew Ianlo (MSE), Summer 2017, *Investigation of Boron Microstructure*
- 151 Christiana Pavlick (MSE), Fall 2017, *Reducing Porosity in Ceramic Slurries*
- 152 Ariela Ravin (MSE), Fall 2017, *Plasticizer Dispersed Nanocellulose in PLA*
- 153 Sam Cleveland (MSE), Fall 2017, *Additive Layer Manufacturing of Ceramics*
- 154 Andrew Ianlo (MSE), Fall 2017, *Investigation of Boron Microstructure*
- 155 Harley Jo Rowland (MSE), Fall 2017, *Properties of CNC Enhanced Water-borne Wood Coatings*
- 156 Nikita Guarav (MSE), Fall 2017, *Properties of CNC Enhanced Water-borne Wood Coatings*
- 157 Edwin Velez-Calez (FYE), Spring 2018, *Investigation of CNF in Asphalt Binder*
- 158 Nikita Guarav (MSE), Spring 2018, *Properties of CNC Enhanced Water-borne Wood Coatings*
- 159 Mackinzie Farnell (MSE), Spring 2018, *CNC Coatings in Printed Electronics*
- 160 Matthew Welch (MSE), Spring 2018, *Tannic Acid Based Hydrogels*
- 161 Mackinzie Farnell (MSE), Fall 2018, *Continuous Production of CNF Films*
- 162 Steven Clark (MSE), Fall 2018, *The Effects of Plasticizer on CNC Composites*
- 163 Xuanyu Sheng (MSE), Fall 2018, *PLA/CNC Nanocomposites for 3D Printing*
- 164 Kayli DeCocker (MSE), Fall 2018, *Nylon 6/CNF Nanocomposites*
- 165 Daniel Wang (MSE), Fall 2018, *Tannic Acid Functionalization*
- 166 MacKinzie Farnell (MSE), Spring 2019, *Continuous Production of CNF Films*
- 167 Kaylie DeCocker (MSE), Spring 2019, *Nylon 6/CNC Nanocomposites*

- 168 Steven Clark (MSE), Spring 2019, *A Comparison of the Preparation of Plasticizer Cellulose Nanocrystal Composite Materials*
- 169 Deepa Korani (CHE), Spring 2019, *Effect of Citric Acid on Barrier Properties of Cellulose Nanocrystal Films*
- 170 Chadwick Choi (MSE), Fall 2019, *Chemical Enhancement of CNF*
- 171 Deepa Korani (CHE), Fall 2019, *Effect of Citric Acid on Barrier Properties of Cellulose Nanocrystal Films*
- 172 Haley Weldy (MSE) Fall 2019, *Laminating TOCNF for Mechanical Enhancement*
- 173 Daniel Cervantes (MSE), Fall 2019, *CNF Composites with Long Fibers*
- 174 Xin Yi Ng (MSE), Fall 2019, *Chemically Crosslinked CNF Films*
- 175 Nikole McPheron (MSE), Fall 2019, *Chemically Treated Durum Wheat Pasta*

Not updated for 2020

- C.8 Short courses and workshops taught
None

E. PUBLICATIONS AND PRESENTATIONS

Purdue graduate students among the authors are underlined.

Purdue undergraduates are double underlined.

Other Purdue staff under direction of Professor Youngblood are dotted underlined

If multiple authors are listed, the primary author is designated by an asterisk*.

Tiering is based on available information regarding impact factor within the specified field or published ranking within the field and agreed upon by representative Primary Committee members.

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- 4 Coatings Based on Side-chain Ether-linked Poly(ethylene glycol) and Fluorocarbon Polymers for the Control of Marine Biofouling” Youngblood, J.P.; Andruzzi, L.; Ober, C.K.*; Hexemer, A.; Kramer, E.J.; Callow, J.A.; Finlay, J.A.; Callow, M.E *Biofouling (Tier 2 Biology)* **2003**, *19*, 91-98.
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- 13 “Reduction in Fixture Time of an Anaerobic Adhesive Through Promoter Content Optimization” Pedraza, E.; Cano, C.; Van Dalen, J.; Pipes, R.B.; Youngblood, J.P.* *International Journal of Adhesion and Adhesives (Tier 1 Adhesives, Tier 2 Polymer Science)* **2008**, *28*, 283-290.
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- 79 “Outdoor manufacture of UV-Cured plastic Linings for Storm water culvert repair: Chemical emissions and residual” Xianzhen Li, Kyungyeon Ra, Md Nuruddin, Seyedeh Mahboobeh Teimouri Sendesi, John A. Howarter, Jeffrey P. Youngblood, Nadya Zyaykina, Chad T. Jafvert, Andrew J. Whelton* *Environmental Pollution* **2019**, *245*, 1031-1040. DOI: <https://doi.org/10.1016/j.envpol.2018.10.080>
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- 107 “Synthesis and characterization of fatty acid amides from commercial vegetable oils and primary alkyl amines for phase change material applications” Daniela Betancourt-Jimenez, Jeffrey P. Youngblood,* Carlos J. Martinez* *ACS Sustainable Chemistry and Engineering*, **2020**, 8, 13683-13691. <https://dx.doi.org/10.1021/acssuschemeng.0c03626>
- 108 “Pleiotropic action of pH-responsive poly(pyridine/PEG) copolymers in the stabilization of silicic acid or the enhancement of its polycondensation” Georgia Skordalou, Matthew Korey, Jeffrey P. Youngblood, Konstantinos D. Demadis* *Reactive and Functional Polymers* **2020**, 157, 104775. <https://doi.org/10.1016/j.reactfunctpolym.2020.104775>
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E.2 Refereed conference or symposium papers.

- 1 “Enhancing Reinforcement Effects of Polymers in Asphalt: An Applied Approach to Solid Waste Disposal” Daly, W.H.;* Qiu, Z.; Youngblood, J.P.; Negulescu, I. in *Progress in Pacific Polymer Science 3*, Ghigginio, K.P. (Ed.), Springer-Verlag, Berlin, **1994**, 381-399.
- 2 “Fundamental Properties of Asphalt Rubber Blends” Daly, W.H.;* Mohammed, L.N.; Negulescu, I.; Harold, P.R.; Youngblood, J.P. *Proceedings of the Materials Engineering Conference 804*,

Infrastructure: New Materials and Methods of Repair (Proceedings of the 3rd Materials Engineering Conference) **1994**, 804, 425.

- 3 “Ultrahydrophobic Polymeric Surfaces Prepared Using Plasma Chemistry” Hsieh, M.C.; Youngblood, J.P.; Chen, W.; McCarthy, T.J.* *Polymer Surface Modification: Relevance to Adhesion, Volume 2* Mittal, K.L. (Ed.) **2000**, 77-89.
- 4 “Polarized light in the contract free determination of thermal expansion of organized cellulose nanocrystal materials” Jairo A. Diaz, Jeffrey P. Youngblood, Robert J. Moon 2014 International Symposium on Optomechatronic Technologies **2014**, 333-334. DOI: 10.1109/ISOT.2014.87
- 5 “A Two-step Thresholding Algorithm for Image-based Defect Detection in Roll-to-Roll Coating of Cellulose Nanocrystal Films” Wei-Tai Chen, Reaz A. Chowdhury, Jeffrey Youngblood, George T.-C. Chiu* 2018 *Annual American Control Conference (ACC)*. **2018**, 4440-4445. DOI: 10.23919/ACC.2018.8431596.

E.3 Books and chapters in books.

- 1 “Mechanical Properties of Cellulose Nanofibril-Wood Flake Laminate” Jen-Chieh Liu, Robert J. Moon,* Jeffrey P. Youngblood* in *Production and Applications of Cellulose Materials*, Postek, Moon, Rudie, Bilodeau eds. (TAPPI PRESS, Peachtree, GA) **2013**, pp.287-288.
- 2 “Effect of Cellulose Nanocrystal Alignment on Thermo-Mechanical Response” Jairo A. Diaz, Robert J. Moon,* Jeffrey P. Youngblood* in *Production and Applications of Cellulose Materials*, Postek, Moon, Rudie, Bilodeau eds. (TAPPI PRESS, Peachtree, GA) **2013**, pp.69-70.
- 3 “Performance-Enhanced Cementitious Materials by Cellulose Nanocrystal Additions” Yizheng Cao, W. Jason Weiss,* Jeffrey P Youngblood,* Robert J. Moon,* Pablo Zavattieri* in *Production and Applications of Cellulose Materials*, Postek, Moon, Rudie, Bilodeau eds. (TAPPI PRESS, Peachtree, GA) **2013**, pp.135-136.
- 4 “Cellulose Nanocrystal Substrates for Recyclable Printed Electronics” Yinhua Zhou, Canek Fuentes-Hernandez, Talha M. Khan, Jen-Chieh Liu, James Hsu, Jae Won Shim, Amir Dindar, Jeffrey P. Youngblood*, Robert J. Moon,* Bernard Kippelin* in *Production and Applications of Cellulose Materials*, Postek, Moon, Rudie, Bilodeau eds. (TAPPI PRESS, Peachtree, GA) **2013**, pp.167-168.
- 5 “Cellulose nanomaterials as additives for cementitious materials” Tengfei Fu, Robert J. Moon, Pablo Zavatter, Jeffrey P Youngblood,* William Jason Weiss* in *Cellulose-Reinforced Nanofibre Composites*, Jawaid, Boufi, Khalil eds. (Woodhead Publishing, UK) **2017**, pp 455-482.
- 6 “Additive manufacturing and characterization of architecture cement-based materials via X-ray microcomputed tomography” Mohamadreza Moini, Jan Olek, Bryan Magee, Pablo Zavattieri, Jeffrey Youngblood in *RILEM International Conference on Concrete and Digital Fabrication 2018 (RILEM Book series, Vol 19)*, Wangler, Flatt eds. **2018**, Chap 16, p176-189 [10.1007/978-3-319-99519-9_16](https://doi.org/10.1007/978-3-319-99519-9_16)

E.4 Other publications.

- 1 Letter to the Editor: “Mixing It Up” Jeffrey P. Youngblood *Chemical and Engineering News* **2006**, Oct. 2, 7-8.
- 2 “Bioinspired Materials for Self-Healing and Self-Cleaning” Sottos, N.A.; Youngblood, J.P. *Materials Research Society Bulletin guest editor* **August 2008**. *This is the Introductory article to an issue dedicated on the subject matter where six different review articles are presented. Professor Youngblood was invited to guest edit the issue by the editorial board of MRS bulletin.*
- 3 “A Large Task for Large Molecules” Youngblood, J.P.; Stratton, T.R. *The Chemical Engineer (TCE)* **November 2009**, 821, 36-37.
- 4 “Processing of Nanofibrillated and Nanocrystalline Cellulose Neat Films” Riesing, A.B.; Liu, J-C; Moon, R.J.; Youngblood, J.P.* *Society of Advanced Manufacturing and Process Engineering (SAMPE)*, **2010**

- 5 “Field Repair of Composite Structures by VARTM” R. Sterkenburg, T. Futch, R.B. Pipes, I. Coker, M. Gordon, M. Hockemeyer, D. Lucero, J. Youngblood, D. Adams, D. Koester, *Society of Advanced Manufacturing and Process Engineering (SAMPE) (Baltimore, MD) May 2012.*
- 6 Editorial: “Green Nanocomposites” Jaime Grunlan, Lars Wagberg, Jeffrey P. Youngblood *Green Materials (Tier 2 Sustainability) 2014, 2 (4), 161-162. DOI: 10.1680/gmat.2014.2.4.161*
- 7 “Contaminant release from storm water culvert rehabilitation technologies: understanding implications to the environment and long-term material integrity” Andrew J. Whelton,* Kyungyeon Ra, Seyedeh Mahboobeh Teimouri Sendesi, Md Nuruddin, Xianzhen Li, John A. Howarter, Jeffrey P. Youngblood, Chad T. Jafvert, Nadezhda N. Zyaykina *US Federal Highway Administration Pooled Fund Study Report 2019, FHWA TPF-5(339) DOI: 10.5703/1288284317089*

E.5 Contributed conference/symposium presentations.

Speakers are designated by asterisk

- 1 “Inductively Coupled RF Plasma Generation of PTFE Films Using Solid Phase Reactants” Jeffrey P Youngblood,* Thomas J. McCarthy *3rd National Graduate Research Polymer Conference (Akron, OH), June, 1998.*
- 2 “Plasma Polymerization of Solid Phase Polymer Reactants (Non-Classical Sputtering of Polymers)” Jeffrey P Youngblood,* Thomas J. McCarthy *American Chemical Society National Meeting (New Orleans, LA), August, 1999.*
- 3 “Ultrahydrophobic Polymer Surfaces Prepared by Simultaneous Ablation of Polypropylene and Sputtering of Poly(tetrafluoroethylene) Using Radio Frequency Plasma” Jeffrey P Youngblood,* Thomas J. McCarthy *American Chemical Society National Meeting (New Orleans, LA), August, 1999.*
- 4 “Ultrahydrophobicity: Control of Contact Line Topography” Jeffrey P Youngblood,* Thomas J. McCarthy *American Chemical Society National Meeting (Washington D.C.), August, 2000.*
- 5 “Poster: Nickel-mediated atom transfer radical polymerization (ATRP) of side-group siloxane containing block copolymers for controlled wettability” Jeffrey P Youngblood,* Thomas J. McCarthy *American Chemical Society National Meeting (Washington D.C.), August, 2000.*
- 6 “Ether linked, Side Chain Poly (ethylene glycol) and Fluorocarbon Containing Polymers With Controlled Architecture for Biofouling Resistance and Release” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow *11th Congress on Marine Biofouling and Corrosion (San Diego, CA), July, 2002.*
- 7 “Poly(ethylene glycol) and Fluorocarbon Containing Polymers for Biofouling Resistance and Biofouling Release” Christopher K. Ober,* Seok Ho Kang, Luisa Andruzzi, Jeffrey P. Youngblood, Wageesha Senaratne, Edward J. Kramer, Alex Hexemer, *11th Congress on Marine Biofouling and Corrosion (San Diego, CA), July, 2002*
- 8 “Semi-fluorinated Side-Chain Polymers for Biofouling Resistance and Biofouling Release” Jeffrey P. Youngblood,* Luisa Andruzzi, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow *Fluoropolymers (Savannah, GA), October, 2002.*
- 9 “Block Copolymers as Surface Modifiers: Synthesis, Characterization and Relevance to Fouling Release and Biostability” Christopher K. Ober,* Jeffrey P. Youngblood, Luisa Andruzzi, Wageesha Senaratne, Xuefa Li, Alexander Hexemer, and Edward J. Kramer *American Chemical Society National Meeting (New Orleans, LA), March, 2003.*
- 10 “New Materials for Marine Biofouling Resistance and Release: Semi-fluorinated and PEGylated Block Copolymer Bilayer Coatings” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, and Maureen E. Callow *American Chemical Society National Meeting (New Orleans, LA), March, 2003.*
- 11 “Fluorine End-capped Polyethylene Glycol Materials as Water/Oil Fluid Responsive Surfaces” John Howarter, Jeffrey P Youngblood* *Materials Research Society (San Francisco, CA), March, 2005.*

- 12 “Antibacterial Copolymer Coatings of Quaternized Poly(vinyl pyridine) and the Biocompatible Monomers Hydroxyethyl Methacrylate and Polyethylene Glycol Methacrylate” Jeffrey P Youngblood,* Phillippe H. Sellenet, Bruce M. Applegate *Biofilms 2005, Microbial adhesions to surfaces: Mechanisms and prevention* (Arlington, VA), April, **2005**.
- 13 “Electrospinning of Ceramic Nanofibers from Polymer Precursors” Benjamin M. Eick,* Jeffrey P Youngblood *ASM, The Materials Information Society (Indianapolis, IN)*, March, **2005**.
- 14 “Ceramic Fibers by Electrospinning of Precursor Polymers” Benjamin M. Eick, Jeffrey P Youngblood* *Air Force Office of Scientific Research Metallic and Non-metallic Materials Program Review (Sedona, AZ)*, August **2005**.
- 15 “Poster: Electrospinning of Ceramic Nanofibers from Preceramic Polymer Precursors” Benjamin M. Eick,* Jeffrey P. Youngblood *American Chemical Society National Meeting (Washington, D.C.)* August, **2005**.
- 16 “Hydrophilized Pyridinium Bactericidal Polymers” Philippe H. Sellenet, Bradley C. Allison, Bruce M. Applegate, Jeffrey P. Youngblood* *American Chemical Society National Meeting (Washington, D.C.)* August, **2005**.
- 17 “Fluorinated Surfactants as Stimuli-responsive Polymers and Brushes” John Howarter,* Jeffrey P Youngblood *American Chemical Society National Meeting (Washington, D.C.)* August, **2005**.
- 18 “Implementation of a Unified Materials Processing Laboratory Course” Kevin Trumble, Rodney Trice, Jeff Youngblood, Eric Kvam, Elliott Slamovich,* Matthew Krane *Frontiers in Education Conference (Indianapolis, IN)*, October, **2005**.
- 19 “Ceramic Fibers by Electrospinning of Precursor Polymers” Benjamin M. Eick, Jeffrey P Youngblood* *Air Force Office of Scientific Research Metallic and Non-metallic Materials Program Review (Washington, D.C.)*, November **2006**.
- 20 “Electrospinning of Non-oxide Transition Metal Nanofibers and Conducting Ceramic Nanofibers” Benjamin M. Eick,* Jeffrey P. Youngblood *American Chemical Society National Meeting (Chicago, IL)* March, **2007**.
- 21 “Synthesis, Characterization, and Biocompatibility of Bactericidal Polymer Surfaces” T.R. Stratton,* Bradley C. Allison, Bruce M. Applegate, Jeffrey P. Youngblood *American Chemical Society National Meeting (Chicago, IL)* March, **2007**.
- 22 “Multi-disciplinary Engineering – A New Paradigm in Engineering Education” Jeffrey P Youngblood,* Philip C. Wankat *American Chemical Society National Meeting (Chicago, IL)* March, **2007**.
- 23 “Selective Filtration of Water-Oil Mixtures by stimuli-responsive brushes” John A. Howarter,* Jeffrey P. Youngblood *American Chemical Society National Meeting (Chicago, IL)* March, **2007**.
- 24 “Poster: Deposition Methods for 3-Aminopropyltriethoxysilane Films” John A. Howarter,* Jeffrey P. Youngblood *American Chemical Society National Meeting (Chicago, IL)* March, **2007**.
- 25 “Hydrophilic and Oleophobic Stimuli-responsive Surfaces” Jeffrey P. Youngblood,* John A. Howarter *American Chemical Society National Meeting (Chicago, IL)* March, **2007**.
- 26 “Electrospinning of Carbide and Nitride Ceramic Nanofibers” Jeffrey P Youngblood,* Benjamin Eick *European Ceramic Society Meeting (Berlin, Germany)* June, **2007**.
- 27 “Hydrophilic-Oleophobic Stimuli-Responsive Polymers and Surfaces” Jeffrey P. Youngblood,* John A. Howarter *American Chemical Society National Meeting (New Orleans, LA)* March, **2008**.
- 28 “Surfactant Modified Membranes for the Separation of Oil-in-Water Emulsions” John A. Howarter,* Jeffrey P. Youngblood *American Chemical Society National Meeting (New Orleans, LA)* March, **2008**.
- 29 “Activity and Biocompatibility of Poly(vinyl pyridine)-Based Copolymers” Thomas R. Stratton,* Jeffrey P. Youngblood *American Chemical Society National Meeting (New Orleans, LA)* March, **2008**.
- 30 “Poster: Synthesis and Characterization of Bulk Self-Cleaning Polymers” John A. Howarter,* Jeffrey P. Youngblood *American Chemical Society National Meeting (New Orleans, LA)* March, **2008**.

- 31 “Biocompatibility of Quaternary Antimicrobial Copolymers as Determined by In Vitro Assays of Human Epithelium” Thomas R. Stratton,* Jeffrey P. Youngblood *American Chemical Society National Meeting (Washington, DC) Aug, 2009.*
- 32 “Synthesis and Characterization of Stimuli-Responsive Self-Cleaning Copolymers for Easy Ringing Coatings” John A. Howarter,* Jeffrey P. Youngblood *American Chemical Society National Meeting (Washington, DC) Aug, 2009.*
- 33 “Processing of Nanofibrillated and Nanocrystalline Cellulose Neat Films” Riesing, A.B.; Liu, J-C; Moon, R.J.; Youngblood, J.P.* *Society of Advanced Manufacturing and Process Engineering (SAMPE) (Salt Lake City, UT) Oct, 2010.*
- 34 ‘Shear Based Orientation of High Strength Cellulose Nanocrystal Films” Riesing, A.B.; Liu, J-C; Moon, R.J.; Youngblood, J.P.* *TAPPI International Conference on Nanotechnology for Renewable Materials (Washington, DC) Jun, 2011*
- 35 “Rheological Evolution of Alumina Ceramic Suspension Gels” Jeffrey P. Youngblood” Acosta M., Wiesner, V.; Trice, R.W; Youngblood, J.P. *American Chemical Society National Meeting (Anaheim, CA) Mar, 2011*
- 36 Poster: “Improved Methods for Casting Neat Nanofibrillated and Nanocrystalline Cellulose Films” Riesing, A.B.; Liu, J-C; Moon, R.J.; Youngblood, J.P.* *American Chemical Society National Meeting (Anaheim, CA) Mar, 2011.*
- 37 Invited: “Activity and Biocompatibility of PEGylated Quaternary Antimicrobial Copolymers” Thomas R. Stratton, Jeffrey P. Youngblood* *Central Regional American Chemical Society Meeting (Indianapolis, IN) Jun, 2011.*
- 38 “Fabricating Complex-Shaped Ceramic Components by Injection Molding Ceramic Suspension Gels at Room Temperature,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. *Materials Science and Technology (MS&T) Conference (Columbus, OH) Oct 2011.*
- 39 Poster: “Fabricating Complex-Shaped Ceramic Components by Injection Molding Ceramic Suspension Gels at Room Temperature,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. *International Center for Materials Research (ICMR) and National Hypersonics Science Center (NHSC) Summer School on Materials and Structures for Hypersonic Flight (University of California, Santa Barbara, CA) Aug, 2011. (Best Poster Award Winner)*
- 40 Poster: “Injection Molding of Ceramic Suspension Gels at Room Temperature for Production of Ultra-High Temperature Ceramics,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. *NSF Civil, Mechanical and Manufacturing Innovation (CMMI) Engineering Research and Innovation Conference (Atlanta, GA) Jan, 2011.*
- 41 “Injection Molding Alumina Suspension Gels at Room Temperature,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. *International Conference and Exposition on Advanced Ceramics and Composites (Daytona Beach, FL) Jan 2011.*
- 42 “Fabrication of Complex-Shaped Components by Room-Temperature Injection Molding of Ceramic Suspension Gels” Wiesner, V.*; Acosta M., Youngblood, J.P.; Trice, R.W. *International Conference on Advanced Ceramics and Composites (ICACC) (Daytona Beach, FL), Jan 2012*
- 43 “ Design and Manufacture of Ultra-High Temperature Ceramics with Oriented Strengthening and Toughening Phases” Wiesner, V.; Acosta M.*, Youngblood, J.P.; Trice, R.W. *International Conference on Advanced Ceramics and Composites (ICACC) (Daytona Beach, FL), Jan 2012*
- 44 Invited:“Shear Based Orientation of Nanocrystalline Films of High Strength and Stiffness” Liu, J-C; Diaz Amya, J.; Riesing, A.B.; Moon, R.J.; Youngblood, J.P.* *Materials Research Society (San Francisco, CA), March, 2012.*
- 45 ‘Processing and Characterization of High Strength Nanocellulose Films” Liu, J-C; Diaz Amya, J., Moon, R.J.; Youngblood, J.P.* *TAPPI International Conference on Nanotechnology for Renewable Materials (Montreal, QC, CA) Jun, 2012.*
- 46 “Thermal and Mechanical Properties of Cellulose Nanocrystal and Nanofibril Composites” Riesing, A.B.; Liu, J-C; Diaz, J.; Moon, R.J.; Youngblood, J.P.* *American Chemical Society National Meeting (Philadelphia, PA) Aug, 2012.*

- 47 “Application of the Horizontal Dip-Spin Casting (HDSC) Process to Ultra-High Temperature Ceramic Composites Fabricated with Aligned Reinforcing Phases,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. International Conference and Exposition on Advanced Ceramics and Composites (Daytona Beach, FL) Jan **2012**.
- 48 “Room-Temperature Injection Molding of Aqueous Ceramic Suspension Gels for Fabrication of Complex-Shaped Ceramic Components,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. Materials Science and Technology (MS&T) Conference (Pittsburg, PA) Oct **2012**.
- 49 “Fabricating Complex-Shaped Ceramics by Room-Temperature Injection Molding of Aqueous Ceramic Suspension Gels,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. Invited presentation, Air Force Research Laboratory Materials & Manufacturing Directorate Composites Branch, Wright-Patterson Air Force Base (Dayton, OH) Oct **2012**.
- 50 Poster: “Fabricating Complex-Shaped Ceramic Components by Injection Molding Ceramic Suspension Gels at Room Temperature,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. Gordon Research Conference Solid State Studies in Ceramics (South Hadley, MA) Aug, **2012**.
- 51 Poster: “Green fabrication of complex-shaped ceramic components by room-temperature injection molding of ceramic suspension gels,” Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. 4th International Congress on Ceramics (Chicago, IL) Jul **2012**.
- 52 Invited: “Biocomposites in the US – An insight” Jeffrey P. Youngblood.* Biocomposites Workshop (UK Composites), University of Warwick (Coventry, UK), **2013**.
- 53 “Cellulose Nanocrystal Reinforced Cementitious Materials” Yizheng Cao, W. Jason Weiss, Pablo Zavattieri, Robert J. Moon, Jeffrey P. Youngblood* TAPPI International Conference on Nanotechnology for Renewable Materials (Stockholm, Sweden) Jun, **2013**.
- 54 “Thermal Behavior of Cellulose Nanocrystal (CNC) Films” Jairo Diaz, Robert J. Moon, Jeffrey P. Youngblood* TAPPI International Conference on Nanotechnology for Renewable Materials (Stockholm, Sweden) Jun, **2013**.
- 55 Invited: “Nano-/Bio- Is Not an Either/Or Choice for Sustainable Composites” Alexander Riesing, Jairo Diaz, Jen-Chieh Liu, Shane Peng, Si Chen, Yizheng Cao, Robert Moon, Gregory Schueneman, Alan Rudie, Pablo Zavattieri, Jason Weiss, Ashlie Martini, Stuart Coles, Jeffrey P. Youngblood* ACS/RSC Sustainable Polymers Conference (Safety Harbor, FL) May, **2013**.
- 56 “Effects of Crystal Orientation on Cellulose Nanocrystals-Cellulose Acetate Nanocomposite Fibers Prepared by Dry Spinning”, Chen, S.* Moon, R.J; Youngblood, J.P.; Pipes, R.B. American Chemical Society National Meeting (Indianapolis, IN) Sept, **2013**
- 57 Invited: “Sustainable Composites for Transportation” Alexander Riesing, Jairo Diaz, Jen-Chieh Liu, Shane Peng, Si Chen, Yizheng Cao, Robert Moon, Gregory Schueneman, Alan Rudie, Pablo Zavattieri, Jason Weiss, Ashlie Martini, Stuart Coles, Jeffrey P. Youngblood* American Chemical Society National Meeting (Indianapolis, IN) Sept, **2013**
- 59 Invited: “Sustainable Nanomaterials: Where Nature Has Shown the Way Already” Jeffrey P Youngblood*, Robert Moon. Student Sustainability Conference (U. Warwick, Coventry, UK) Mar, **2013**.
- 60 Invited: “Sustainable Nanomaterials at Purdue University” Jeffrey P Youngblood* National Organization of Black Chemists and Chemical Engineers (NOBCCHE) National Meeting (Indianapolis, IN) Oct, **2013**.
- 61 Plenary: “Nano-/Bio- Is Not an Either/Or Choice for Sustainable Composites” Jeffrey P. Youngblood* Congreso Internacional de Materiales (Medellin, Colombia) Oct, **2013**.
- 62 Poster: "Design and Fabrication of Localized Resonators for Acoustic Metamaterial Applications" Steiner, C.D.*; Martinez, C.J.; Youngblood, J.P. American Chemical Society National Meeting (Indianapolis, IN) Sept, **2013**.
- 63 Poster: "Design and Fabrication of Localized Resonators for Acoustic Metamaterial Applications" Steiner, C.D.*; Martinez, C.J.; Youngblood, J.P. American Chemical Society National Meeting (Indianapolis, IN) SCIMIX Sept, **2013**

- 64 "Mechanical performance of multilayer cellulose nanofibrils laminate" Liu, J-C*; Moon, R.J.; Youngblood, J.P. American Chemical Society National Meeting (Indianapolis, IN) September, **2013**
- 65 Poster: "Cellulose nanocrystals reinforced epoxy nanocomposite for microelectronic applications" Peng, S.X.*; Moon, R.J.; Youngblood, J.P. American Chemical Society National Meeting (Indianapolis, IN) Sept. **2013**
- 66 "Producing Ultra-High Temperature Ceramic Components with Near-Net Shape Geometries by Room-Temperature Injection Molding," Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. Materials Science and Technology Conference (Montreal, Quebec, Canada) Oct, 2013.
- 67 "Green Manufacturing of Near-Net Shape Ceramic Parts by Room-Temperature Injection Molding," Wiesner, V.L.*; Trice, R.W.; Youngblood, J.P. Materials Science and Technology (MS&T) Conference (Montreal, Canada) Oct, **2013**.
- 68 "Utilizing unique flow properties of polymer-ceramic suspensions to produce alumina parts with near-net shape geometries by room-temperature injection molding," Wiesner, V.L.*; Trice, R.W.; Youngblood, J.P. 246th American Chemical Society (ACS) National Meeting (Indianapolis, IN) Sep, **2013**.
- 69 "Fabricating complex-shaped ceramic components by injection molding ceramic suspension gels at room temperature," Wiesner, V.L.*; Youngblood, J.P.; Trice, R.W. International Conference and Exposition on Advanced Ceramics and Composites (Daytona Beach, FL) Jan **2013**.
- 70 "High performance cellulose nanocrystal reinforced cement composites" Cao, Y.*; Youngblood, J.; Moon, R.J.; Weiss, J.; Zavattieri, P.D. 3rd International Symposium on the mechanics of biological systems and materials (SEM 2013 annual conference) (Chicago, IL) Jun, **2013**.
- 71 "High Performance Cellulose Nanocrystal Reinforced Cement Composites. Oral presentation" Cao, Y.*; Youngblood, J.; Weiss, J.; Zavattieri, P.D.; Moon, R.J. The 4th Advances in Cement-based Materials Archive, ACerS Cements Division & Center for Advanced Cement-Based Materials (Urbana, IL) Jul, **2013**.
- 72 "High performance cellulose nanocrystal reinforced cement composites via improving degree of hydration" Cao, Y.*; Youngblood, J.; Moon, R.J.; Weiss, J.; Zavattieri, P.D. 246th American Chemical Society National Meeting and Exposition (Indianapolis, IN) Sep, **2013**.
- 73 "High Performance Cellulose Nanocrystal Cementitious Materials with Improved Degree of Hydration via Short Circuit Diffusion" Cao, Y.*; Youngblood, J.; Moon, R.J.; Weiss, J.; Zavattieri, P.D. MRS Fall Meeting & Exhibit (Boston, MA) Dec, **2013**.
- 74 "Structural Nanocellulose Composites" Jen-Chieh Liu, Si Chen, Robert J. Moon, Jeffrey P. Youngblood* TAPPI International Conference on Nanotechnology for Renewable Materials (Vancouver, Canada) Jun, **2014**.
- 75 "Development of Acoustic Metamaterials with Anisotropic Mass Densities for Blast Wave Mitigation," Youngblood, J.P. DTRA Contractors Meeting (Alexandria, VA) July, **2014**.
- 76 "Sustainable Composites and Nanocomposites from Biomass Derived Sources," Youngblood, J.P. 248th American Chemical Society (ACS) National Meeting (San Francisco, CA) Aug, **2014**.
- 77 "Strength Improvement of Cement Pastes with Cellulose Nanocrystals via Short Circuit Diffusion," Youngblood, J.P. Society of Engineering Science (West Lafayette, IN) Oct, **2014**.
- 78 "Reinforcement of Dry Spun Polymeric Fibers by Cellulose Nanocrystals," Youngblood, J.P. Society of Engineering Science (West Lafayette, IN) Oct, **2014**.
- 79 "Mechanical and Fracture Behavior of Cellulose Based Multilayer Laminate," Youngblood, J.P. Society of Engineering Science (West Lafayette, IN) Oct, **2014**.
- 80 "Thermal properties in cellulose nanocrystal composite materials" Youngblood, J.P. 249th American Chemical Society (ACS) National Meeting (Denver, CO) Mar, **2015**.
- 81 "High performance cement via cellulose nanocrystal addition" Youngblood, J.P. 249th American Chemical Society (ACS) National Meeting (Denver, CO) Mar, **2015**.
- 82 "Structural Nanocellulose Composites" Youngblood, J.P. 249th American Chemical Society (ACS) National Meeting (Denver, CO) Mar, **2015**.

- 83 “High performance cement via cellulose nanocrystal addition” Jeffrey P. Youngblood* TAPPI International Conference on Nanotechnology for Renewable Materials (Atlanta, GA) Jun, **2015**.
- 84 Invited: “Enhancing thermal, mechanical, acoustic and environmental performance of thermosets with advanced composites” Jeffrey P Youngblood Henkel Technical Board Review (Hartford, CT) Sept **2015**.
- 85 Invited: “Moving Anti-Ice Coatings from the Lab to the Field: Solving the Path from Curiosity to Industry” American Chemical Society National Meeting (San Diego, CA) Mar, **2016**.
- 86 Invited: “What is old is new again: Trying to use wood-derived nanomaterials for advanced nanocomposites” ACS/RSC Sustainable Polymers Conference (Safety Harbor, FL) May, **2016**.
- 87 “Single pot hydrophobization of CNCs from water and its potential for polymer nanocomposites” TAPPI International Conference on Nanotechnology for Renewable Materials (Grenoble, FR) Jun, **2016**.
- 88 Invited: “Nano-/Bio- is not an Either/Or Choice for Sustainable Materials” International Symposium on Materials from Renewable (Fargo, ND) July, **2016**.
- 89 Invited: “Moving Anti-Ice Coatings from the Lab to the Field: Solving the Path from Curiosity to Industry” Fluoropolymers (New Orleans, LA) Oct, **2016**.
- 90 “High performance cement via cellulose nanocrystal addition” TAPPI International Conference on Nanotechnology for Renewable Materials (Montreal, CA) Jun, **2017**.
- 92 Invited: “EcoBioNanoComposites: How to Build a Better Buzzword!” Science-on-TAP (West Lafayette, IN) Sept, **2017**.
- 93 “Cellulosic nanomaterials and their potential for polymer nanocomposites” Frontiers in Green Materials (London, UK) Dec, **2017**.
- 94 “3D Printed Cementitious Materials with Controlled Architectures of the Microstructure” ICACC (Daytona, FL) Jan **2018**.
- 95 Invited: “A Primer on Fiber Reinforced Polymer Composites (Part of a CIPP emissions presentation with Andrew Whelton, CIVL and John Howarter, MSE/EEE) CIPP Corp Annual Meeting (Ft Myers, FL) Feb **2018**.
- 96 “Is Development of Icephobic Surfaces Really Possible?” Adhesion Society Annual Meeting (San, Diego, CA) Feb **2018**.
- 97 “Cellulose Nanocomposites (and the Role of Surface Chemistry)” American Chemical Society National Meeting (New Orleans, LA) Mar **2018**.
- 98 “Additive Manufacturing via Continuous Filament Direct Ink Writing of Aqueous Ceramic Suspensions” bAmerican Chemical Society National Meeting (New Orleans, LA) Mar **2018**.
- 99 Invited: “Cellulose Nanocrystal Additives to Cement” ASCE Indiana Chapter Annual Meeting (Carmel, IN), Apr **2018**.
- 100 “Improved Wood Coatings via CNC addition” TAPPI International Conference on Nanotechnology for Renewable Materials (Madison, WI) June **2018**.
- 101 Invited: “A Primer on Fiber Reinforced Polymer Composites” (Part of a CIPP safety presentation, with Andrew Whelton, CIVL) DOT Safety Conference (Post Falls, ID), Sept **2018**.
- 102 “The role of chemistry in high performance cement via cellulose nanocrystal addition” TAPPI International Conference on Nanotechnology for Renewable Materials (Chiba, Japan) June **2019**.
- 103 Invited: “Cellulose Nanomaterials as a Sustainable Barrier Material for Packaging Applications” Specialty Papers USA **2019** (Milwaukee, WI) October 2019.
- 104 Invited: “Continuous Processing of High Strength CNF Sheets” TAPPI Virtual International Conference on Nanotechnology for Renewable Materials June **2020**.

E.6 Invited publications and conference/symposium presentations (duplicated).

- 1 “Hydrophilic and Oleophobic Stimuli-responsive Surfaces” Jeffrey P. Youngblood,* John A. Howarter *American Chemical Society (Chicago, IL)* March, **2007**. (E.5.25)

- 2 INVITED FEATURED ARTICLE “Self-Cleaning Hydrophilic and Next Generation Anti-Fog Surfaces and Coatings” Howarter, J.A.; Youngblood, J.P.* *Macromolecular Rapid. Communications* **2008**, 29, 455-466. (E.1.13)
- 3 “Bioinspired Materials for Self-Healing and Self-Cleaning” Sottos, N.A.; Youngblood, J.P. *Materials Research Society Bulletin guest editor August 2008.. This is the Introductory article to an issue dedicated on the subject matter where six different review articles are presented. Professor Youngblood was invited to guest edit the issue by the editorial board of MRS bulletin.*(E.4.2)
- 4 “A Large Task for Large Molecules” Youngblood, J.P.; Stratton, T.R. *The Chemical Engineer (TCE)* **November 2009**, 821, 36-37. (E.4.3)
- 5 “Activity and Biocompatibility of PEGylated Quaternary Antimicrobial Copolymers” Thomas R. Stratton, Jeffrey P. Youngblood* *Central Regional American Chemical Society Meeting (Indianapolis, IN)* Jun, **2011**. (E.5.22)
- 6 "Cellulose Nanomaterials Review: Structure, Properties, and Nanocomposites" Moon, R.J.; Martini, A.; Nairn, J.; Simonsen, J.; Youngblood, J.P. *Royal Society of Chemistry, Chemical Reviews* **2011**, 40, 3941-3994. (E.1.22)
- 7 “Shear Based Orientation of Nanocrystalline Films of High Strength and Stiffness” Liu, J-C; Diaz Amya, J.; Riesing, A.B.; Moon, R.J.; Youngblood, J.P. *Materials Research Society (San Francisco, CA)*, March, **2012**. (E.5.44) (*Invited by Assoc. Prof. Carlos Martinez, Purdue U.*)
- 8 “Biocomposites in the US – An insight” Jeffrey P. Youngblood.* Biocomposites Workshop (UK Composites), University of Warwick (Coventry, UK), **2013**. (E.5.52) (*Invited by Ass. Prof. Stuart Coles, U. Warwick*)
- 9 “Sustainable Nanomaterials: Where Nature Has Shown the Way Already” Jeffrey P Youngblood*, Robert Moon Student Sustainability Conference (U. Warwick, Coventry, UK) Mar, **2013**. (E.5.59) (*Invited by Marco Cinelli, U. Warwick*)
- 10 “Nano-/Bio- Is Not an Either/Or Choice for Sustainable Composites” Alexander Riesing, Jairo Diaz, Jen-Chieh Liu, Shane Peng, Si Chen, Yizheng Cao, Robert Moon, Gregory Schueneman, Alan Rudie, Pablo Zavattieri, Jason Weiss, Ashlie Martini, Stuart Coles, Jeffrey P. Youngblood* ACS/RSC Sustainable Polymers Conference (Safety Harbor, FL) May, **2013**. (E.5.55) (*Invited by Dr. Dylan Boday, IBM*)
- 11 “Sustainable Composites for Transportation” Alexander Riesing, Jairo Diaz, Jen-Chieh Liu, Shane Peng, Si Chen, Yizheng Cao, Robert Moon, Gregory Schueneman, Alan Rudie, Pablo Zavattieri, Jason Weiss, Ashlie Martini, Stuart Coles, Jeffrey P. Youngblood* American Chemical Society National Meeting (Indianapolis, IN) Sept, **2013** (E.5.57)
- 12 “Sustainable Nanomaterials at Purdue University” Jeffrey P Youngblood* National Organization of Black Chemists and Chemical Engineers (NOBCChE) National Meeting (Indianapolis, IN) Oct, **2013**. (E.5.60) (*Invited by Dr. Roderquita Moore, USFS*)
- 13 Plenary: “Nano-/Bio- Is Not an Either/Or Choice for Sustainable Composites” Jeffrey P. Youngblood* Congreso Internacional de Materiales (Medellin, Colombia) Oct, **2013**. (E.5.61) (*Invited by Assoc. Prof. Monica Alvarez, EAFIT*)
- 14 “Enhancing thermal, mechanical, acoustic and environmental performance of thermosets with advanced composites” Jeffrey P Youngblood Henkel Technical Board Review (Hartford, CT) Sept **2015**.
- 15 “Moving Anti-Ice Coatings from the Lab to the Field: Solving the Path from Curiosity to Industry” American Chemical Society National Meeting (San Diego, CA) Mar, **2016**. (*Invited by Dr. Scott Iacono*) (E.5.85)
- 16 “What is old is new again: Trying to use wood-derived nanomaterials for advanced nanocomposites” ACS/RSC Sustainable Polymers Conference (Safety Harbor, FL) May, **2016**. (*Invited by Dr. Dylan Boday, IBM*) (E.5.86)
- 17 “Nano-/Bio- is not an Either/Or Choice for Sustainable Materials” International Symposium on Materials from Renewable (Fargo, ND) July, **2016**. (*Invited by Prof. Andriy Voronov, NDSU*) (E.5.88)

- 18 “Moving Anti-Ice Coatings from the Lab to the Field: Solving the Path from Curiosity to Industry” Fluoropolymers (New Orleans, LA) Oct, **2016**. (*Invited by Dr. Scott Iacono*) (E.5.89).
- 19 “EcoBioNanoComposites: How to Build a Better Buzzword!” Science-on-TAP (West Lafayette, IN) Sept, **2017**. (E.5.92)
- 20 “A Primer on Fiber Reinforced Polymer Composites (Part of a CIPP emissions presentation with Andrew Whelton, CIVL and John Howarter, MSE/EEE) CIPP Corp Annual Meeting (Ft Myers, FL) Feb **2018**.
- 21 “Cellulose Nanocrystal Additives to Cement” ASCE Indiana Chapter Annual Meeting (Carmel, IN), Apr **2018**.
- 22 “A Primer on Fiber Reinforced Polymer Composites” (Part of a CIPP safety presentation, with Andrew Whelton, CIVL) DOT Safety Conference (Post Falls, ID), Sept **2018**.
- 23 “Cellulose Nanomaterials as a Sustainable Barrier Material for Packaging Applications” Specialty Papers USA 2019 (Milwaukee, WI) October **2019**.
- 24 “Continuous Processing of High Strength CNF Sheets” TAPPI Virtual International Conference on Nanotechnology for Renewable Materials June **2020**.

E.7 Invited colloquium/seminar series presentations.

- 1 “The Nature of Surfaces: Relevance to Wettability and Biology” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow, Thomas J. McCarthy *The University of Florida (Gainesville, FL), Department of Chemistry*, October, **2001**.
- 2 “Poly(ethylene glycol) and Fluorocarbon Containing Polymers for Biofouling Resistance and Biofouling Release” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow *Kraton, Inc. (Houston, TX.)*, March, **2002**.
- 3 “The Nature of Surfaces: Relevance to Wettability and Biology” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow, Thomas J. McCarthy *Carnegie Mellon University (Pittsburgh, PA), Department of Chemistry*, December, **2002**.
- 4 “The Nature of Surfaces: Relevance to Wettability and Biology” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow, Thomas J. McCarthy *The University of Houston (Houston, TX), Department of Chemical Engineering*, January, **2003**.
- 5 “The Nature of Surfaces: Relevance to Wettability and Biology” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow, Thomas J. McCarthy *The University of California, Riverside (Riverside, CA), Department of Chemical and Environmental Engineering*, January, **2003**.
- 6 “The Nature of Surfaces: Relevance to Wettability and Biology” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow, Thomas J. McCarthy *Purdue University (West, Lafayette, IN), School of Materials Engineering*, February, **2003**.
- 7 “The Nature of Surfaces: Relevance to Wettability and Biology” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow, Thomas J. McCarthy *The University of Florida (Gainesville, FL), Department of Materials Engineering*, February, **2003**.
- 8 “The Nature of Surfaces: Relevance to Wettability and Biology” Jeffrey P. Youngblood,* Luisa Andruzzi, Wageesha Senaratne, Christopher K. Ober, Jim A. Callow, John A. Finlay, Maureen E. Callow, Thomas J. McCarthy *George Washington University (Washington, DC), Department of Chemistry*, March, **2003**.

- 9 “Advanced Polymers and Surfaces from Rational Design” Jeffrey P Youngblood,* John Howarter, Phillippe H. Sellenet, Bruce M. Applegate *Louisiana State University (Baton Rouge, LA), Department of Chemistry and the Macromolecular Studies Group*, October, **2004**.
- 10 “Advanced Materials from Rational Design” Jeffrey P Youngblood,* John Howarter, Benjamin M. Eick, Phillippe H. Sellenet, Bruce M. Applegate, Thomas Webster *National Institute of Standards and Technology (Gaithersburg, MD)*, April, **2005**.
- 11 “Advanced Materials from Rational Design” Jeffrey P Youngblood,* John Howarter, Benjamin M. Eick, Phillippe H. Sellenet, Bradley Allison, Bruce M. Applegate, Thomas Webster *Rohm and Haas Corporation (Spring House, PA)*, Jan, **2006**.
- 13 “Advanced Materials from Rational Design” Jeffrey P Youngblood,* John Howarter, Benjamin M. Eick, Phillippe H. Sellenet, Bradley Allison, Bruce M. Applegate, *Essilor Corporation (St. Petersburg, FL)*, May, **2007**.
- 14 “Polymer Surface Science – The Study of Many Parts in a Superficial Way” Jeffrey P. Youngblood,* *Northern Illinois University (DeKalb, IL)*, Nov, **2008**.
- 15 “Superficial Science - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *DuBois Chemicals (Cincinnati, OH)* Jan, **2009**.
- 16 “Superficial Science - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *Indiana University – Purdue University, Indianapolis (IUPUI)* Aug, **2009**.
- 17 “Superficial Science - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *S.C. Johnson, Inc (Racine, WI)* Dec, **2009**.
- 18 “Superficial Science - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *University of Southern Mississippi (Hattiesburg, MS)* Jan, **2010**.
- 19 “On the Surface of Things - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *Proctor and Gamble Corporation (Cincinnati, OH)* Feb, **2010**.
- 20 “On the Surface of Things - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *3M Corporation (Minneapolis, MN)* March, **2010**.
- 21 “On the Surface of Things - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *Pall Corporation (Port Washington, NY)* Aug, **2010**.
- 22 “On the Surface of Things - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *University of Michigan (Ann Arbor, MI)* Sept, **2010**.
- 23 “On the Surface of Things - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *University of Massachusetts (Amherst, MA)* Nov, **2010**.
- 24 “Superficial Science - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *University of Queensland (Brisbane, Australia)* June, **2012**.
- 25 “Superficial Science - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *University of Akron (Akron, OH)* Aug, **2012**.
- 26 “Superficial Science - Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *University of Warwick, Chemistry Dept (Coventry, UK)* Nov, **2012**. (*Guest Lecture, invited by Andrew Dove*)
- 27 “Polymer Surface Science at Purdue” Jeffrey P. Youngblood,* *Royal DSM (Geleen, Netherlands)* Nov, **2012**.
- 28 “Sustainable Composites Research at WMG from the “Purdue Perspective”” Jeffrey P. Youngblood*, *University of Warwick, Warwick Manufacturing Group (Coventry, UK)*, Jun, **2013**.
- 29 “Nano-/Bio- Is Not an Either/Or Choice for Sustainable Nanocomposites” Jeffrey P. Youngblood,* *Nike (Portland, OR)*, Mar **2014**.
- 30 “Nano-/Bio- Is Not an Either/Or Choice for Sustainable Nanocomposites” Jeffrey P. Youngblood,* *Portland Section of the American Chemical Society monthly meeting (Portland, OR)*, Mar **2014**.
- 31 “Nano-/Bio- Is Not an Either/Or Choice for Sustainable Nanocomposites” ” Jeffrey P. Youngblood,* *3M (Minneapolis, MN)*, Aug **2014**.
- 32 “Nano-/Bio- Is Not an Either/Or Choice for Sustainable Nanocomposites” ” Jeffrey P. Youngblood,* *Georgia Tech University (Atlanta, GA)*, May **2015**.

- 32 “High Performance Cement Via Cellulose Nanocrystal Addition” Jeffrey P. Youngblood,* *Fibria (Sao Paulo, BR)*, Oct **2015**.
- 33 “Nano/Bio is not an Either/Or Choice for Composites” Virginia Tech University (Blacksburg, VA) Oct **2018**.
- 34 “Injection Molding and Additive Manufacturing of Aqueous Ceramic Suspensions” Sandia National Lab (Albuquerque, NM) Dec **2018**.

F. ENGAGEMENT/TECHNOLOGY TRANSFER (if applicable)

F.1 Candidate's own statement of contributions to technology transfer.

Prof. Youngblood has been specifically focused on intellectual property (IP) and technology transfer activities while at Purdue. While he has not yet had the desire for entrepreneurship to start a company, he has established a reputation as an inventor and has instead focused on licensing IP to industry. These efforts have resulted in 3 issued patents, 11 other patents applied for, and 2 more invention disclosures. Of this group, 2 currently have or have had revenue bearing licenses, 2 are jointly held IP by industry, and 1 is optioned. The most notable of these are the patent on "Bactericidal Polymers" is licensed to Polygroup, LLC, which is a startup company formed around this technology, and the patent pending "Cellulose Nanocrystal Additions to Cement", which multiple companies have been interested in licensing. These IP efforts have also resulted in numerous popular press articles, including NPR, C&E News, Local newscasts, etc -- the most notable, of which was an appearance on Ali Velshi's program on CNN regarding purification of oil from water for the Horizon/BP gulf oil spill, an interview on RTV6, and an interview on NPR. Overall, all of these activities indicate high impact of the research of Prof. Youngblood.

F.2 U.S. and international patents awarded.

- 1 "Hydrophilized Bactericidal Polymers" Youngblood, J.P.; Sellenet, P.H., Stratton, T.P. *United States Patent 8343473* Jan 1, **2013** **Licensed to PolyGroup, LLC.**
- 2 "Fusible Substrate" Whitney, S.J.; Travis, W.; Youngblood, J.P. ; Barriball, E.D.; Book, S.M.; Kittle, M.J. *United States Patent 8525633* Sept 3, **2013** . **Jointly Held by and licensed to Littlefuse, Inc**
- 3 "Recyclable organic solar cells on cellulose nanocrystal substrates" Yinhua Zhou, Canek Fuentes-Hernandez, Talha M. Khan, Jen-Chieh Liu, James Hsu, Jae Won Shim, Amir Dindar, Jeffrey P. Youngblood,*Robert J. Moon, Bernard Kippelen *United States Patent 9,203,030 Dec. 1 2013. Jointly held by and executed by Georgia Tech U.*
4. "Method of forming a cellulose nanocrystalline film" Riesing, A., Moon, R., Youngblood, J.P. *United States Patent 9296131* March 29, **2016.**
5. "Method and system of vacuum assisted resin transfer moldings for repair of composite materials and structure" Pipes, R. Byron; Coker, Ian Cameron; Adams, Douglas Edward; Sterkenburg, Ronald; Youngblood, Jeffrey P. *United States Patent 9944026* April 17, **2018.**
- 6 "Phosphorylation of products for flame retardant applications" Youngblood, Jeffrey Paul; Howarter, John Alan; Mendis, Gamini Patrick *United States Patent 9957443* May 1, **2018.**
- 7 "Method of forming a cellulose nanocrystalline Film" Youngblood, Jeffrey P.; Moon, Robert J.; Reising, Alex *United States Patent 9969108* May 15, **2018.**
- 8 "Coating system including oxide nanoparticles in oxide matrix" Shim, Sungbo; Landwehr, Sean E.; Gong, Stephanie, Youngblood, Jeffrey P.; Trice, Rodney. *United States Patent 10,280,770* May 7, **2019. Jointly held and being executed by Rolls Royce.**
- 9 "Functionalized cellulose nanocrystal materials and methods of preparation" Youngblood, Jeffrey P.; Yoo, Youngman. *United States Patent 10,669,404.* June 2 **2020.**

F.3 Patents submitted.

- 1 "Stimuli-Responsive Polymeric Surface Materials" Youngblood, J.P.; Howarter, J.A. *United States Patent Application 20080146734* June 19, 2008 and 20090317621 Dec 24, **2009- abandoned. Licensed to DuBois Chemicals 2008-2010.**
- 2 "Encapsulation of Two-Part Epoxy from Double Emulsions Generated in Microcapillary Devices" Martinez, CJ; Pipes, RBE; Youngblood, JP *United States Patent Application 61/702,821* September 19, **2012.**

- 3 “Cellulose Nanocrystal (CNC) Particles and Capsules from Single and Double Emulsions” Youngblood, JP; Zavattieri, P, Martinez, CJ, Moon, RJ. *United States Patent Application 61/702830* September 19, **2012**.
- 4 “Injection Molding of Aqueous Suspensions of High-Temperature Ceramics” Jeffrey P. Youngblood, Rodney W. Trice, Valerie Wiesner, Lisa Rueschhoff, Andres Diaz Cano *United States Patent Application 62184292*, **2013** *Optioned to Scientific Ceramic Engineering 2015-2016*.
- 5 “Cellulose Nanocrystal Additives and Improved Cementitious Systems” Yizheng Cao, Jeffrey P Youngblood, Pablo Zavattieri, Robert J. Moon, W. Jason Weiss *United States Patent Application 20160347661 A1*, Dec. 1 **2016**. *Licensed to Blue Goose Biorefineries*.
- 6 “Reinforced Epoxy Nanocomposites and Methods for Preparation Thereof” Jeffrey P. Youngblood, Shane X. Peng, Robert J. Moon *United States Patent Application 20160152820 A1* June 2, **2016**.
- 7 “Method of Using Hydrophilized Bactericidal Polymers” Jeffrey P. Youngblood, Philippe Sellenet *United States Patent Application 20160262392 A1* Sept 15, **2016**.
- 8 “Compositions and Coatings Formed Thereof With Reduced Ice Adherence and Accumulation” Sathish Ranganathan, Srinivas Siripurapu, Vijay Mhetar, Jeffrey P Youngblood, John Howarter *United States Patent Application 20170321077 A1* November 9, **2017**.
- 9 “Epoxy tannin reaction product compositions” Youngblood, Jeffrey Paul, Howarter, John A.; Korey, Matthew N. *United State Patent Application 62465485* Mar 1, **2017**.
- 10 “Continuous Roll-to-Roll Fabrication of Cellulose Nanocrystal (CNC) Coatings” Youngblood, Jeffrey Paul; Chowdhury, Reaz; Nuruddin, Md. *United States Patent Application 62555084* Sept 7, **2017**.
- 11 “Method for Dispersion of Nanocellulose in Melt-Processed Polymers” Caitlyn Clarkson, Reaz Chowdhury, Md Nuruddin, Jeffrey P Youngblood, *United States Patent Application Number 6273969*, receipt date 10/01/**2018**.
- 12 “Novel Boron Carbide Composite” Erich Weaver, Andres Diaz Cano, Rodney Trice, Jeffrey P. Youngblood *United States Patent Application Number 62772659*, receipt date 11/29/**2018**.
- 13 “Transparent alumina-based plate and method of making thereof” Youngblood, Jeffrey Paul; Trice, Rodney W; Schlup, Andrew; Costakis, William. Docket number 68913-01 March 2, **2020**.

F.4 Other major technology transfer activities.
None

F.5 Industry interactions (include dates).
None.

F.6 Appearances in media interviews and other coverage. (e.g., print, web, radio, television or other media coverage).

Notable popular press

CNN transcript: <http://transcripts.cnn.com/TRANSCRIPTS/1006/04/cnr.05.html>

RTV6 Interview: <http://www.theindychannel.com/news/purdue-prof-s-new-filter-could-aid-oil-cleanups>

London Telegraph report: <http://www.telegraph.co.uk/science/science-news/6039031/Self-cleaning-kitchen-work-tops-could-be-a-reality.html>

Other popular press (from the first 10 pages of a Google search):

<http://www.ivanhoe.com/science/story/2011/02/823a.html>

<http://www.lafayette-online.com/purdue-news/2010/07/science-on-tap-oil-spill-cleanup-tech#.UqdSOvRDtoI>

<http://www.greenbiz.com/news/2009/08/18/purdue-scientists-develop-self-cleaning-coatings-repel-oil>

<http://www.homelandsecuritynewswire.com/purdue-university-membrane-technology-could-help-cleanup-oil-spills>

<http://phys.org/news194866913.html>
<http://www.treehugger.com/clean-technology/at-last-no-more-dishpan-hands-new-coating-could-eliminate-detergents.html>
<http://www.newscientist.com/article/mg21528786.100-why-wood-pulp-is-worlds-new-wonder-material.html#.UqdSXPRDtol>
<http://www.livescience.com/7242-coating-glass-clean-fog-free.html>
<http://www.sciencedaily.com/releases/2013/03/130326111958.htm>
<http://www.wndu.com/news/indiana/headlines/95601519.html>
<http://www.frogheart.ca/?p=9628>
http://www.purdueexponent.org/campus/article_d056872b-1b28-5dc1-8fb1-28db691d4ac9.html
<http://www.aip.org/dbis/APS/stories/21022.html>
<http://www.gmanetwork.com/news/story/301670/scitech/technology/us-researchers-develop-recyclable-solar-cells-from-trees>
<http://esciencenews.com/articles/2008/11/18/new.filtering.technology.has.environmental.industrial.applications>
<http://www.futurity.org/recyclable-solar-cells-made-from-trees/>
<http://news.softpedia.com/news/Self-Cleaning-Coatings-Eliminate-the-Need-for-Detergents-119372.shtml>
<http://www.ecofriend.com/purdue-researchers-develop-tech-to-clean-up-oil-spills.html>

G. ACTIVITIES ON DIVERSITY AND CLIMATE (if applicable)

H. SERVICE

H.1 Candidate's own statement of contributions to service.

H.2 Major committee assignments in the Department, School, and/or University.

- 1 School of Materials Engineering Undergraduate Committee (2004-2007, 2016-present)
- 2 College of Engineering Cellular and Tissue Engineering Cluster Hire Search Committee (2005-2009)
- 3 School of Materials Engineering Armstrong Move Committee (2005-2008)
- 4 School of Materials Engineering Safety Committee (2005-2011, **chair** 2005-2011)
- 5 College of Engineering Murphy and Potter Engineering Award Committee (2006, 2007)
- 6 School of Materials Engineering Staff and Student Award Committee (2006-2007)
- 7 School of Materials Engineering Development Committee (2006-2007)
- 8 School of Materials Engineering Technician Hiring Committee (2006-2007)
- 9 Purdue's Discovery Park Center for the Environment Internal Executive Committee (2006-2011)
- 10 College of Engineering Division of Environmental and Ecological Engineering Committee (2006-2012), EEE Undergraduate Minor Subcommittee (2007-2008)
- 11 School of Materials Engineering Leadership Team (2007-2012)
- 12 School of Materials Engineering Graduate Committee (2007-present; **chair**: 2010-2016)
- 13 School of Materials Engineering Faculty Hiring committee (2008-2012, 2014, 2016)
- 14 Birck Nanotechnology Center Roll-2-Roll Preeminent Team Hiring Committee (2014-2018).
- 15 School of Materials Engineering Equipment Committee (2016-present).

H.3 Administrative duties at Purdue.

None

H.4 Service to government or professional organization.

- 1 American Chemical Society Polymer Chemistry Division Membership Committee (2005-present)
- 2 Organized symposium titled "Surfaces and Interfaces of Polymers" at 2007 Spring National American Chemical Society Meeting, Chicago (March 25-30, 2007) with A.J. Crosby (PSE, UMass), and R. Advincula (Chem., U. Houston). 72 speakers over 4.5 day joint Division of Polymer Chemistry and Division of Polymeric Materials Science and Engineering symposium.
- 3 American Chemical Society Polymer Chemistry Division Membership Committee Chair (2007-2010)
- 4 MRS Bulletin, Guest Editor for thematic issue of Bioinspired Materials for Self-Healing and Self-Cleaning (2008).
- 5 American Chemical Society Polymer Chemistry Division Programming Chair (2011- 2014)
- 6 Organized symposium titled "Polymers for Transportation" at 2013 Fall National American Chemical Society Meeting, Indianapolis, IN with Mary Anne Meador (NASA Glenn), Michael Meador (NASA Glenn) and Sarah Morgan (USM).
- 7 Green Materials (ICE publishing), Guest Editor for thematic issue on green nanotechnology (2014).
- 8 Green Materials (ICE publishing), Editorial Panel member (2014-present). Editor-in-Chief (2017-2019).
- 9 Journal of Polymers and the Environment, Editorial Panel member (2016-present).

H.5 Consulting arrangements.

Jeff Youngblood has averaged approximately 10 hrs per consulting arrangement.

1. Fish and Richardson, P.C., *Technical expert in patent litigation*, 2006

2. Bakers and Daniel, L.L.P. representing Butterworth Industries, *Technical expert/review in patent application*, 2008
3. Rodney Trice, Purdue University, *Technical expert for consulting activity*, 2008.
4. Elo Touchsystems, *Technical consultant on fogging*, 2008.

H.6 International program activities.
None

I. OTHER

I.1 Collaborative activities with other faculty and institutions.

- 1 Founding Member of the Cell and Tissue Engineering Community, Purdue University (2008)
- 2 Collaboration with Prof. Darren Martin and Prof. Rowan Truss of University of Queensland, Australia in Nanocellulose processing. Have exchanged student researchers (2011-present).
- 3 Collaboration with Prof. Monica Alvarez of EAFIT, Colombia. Hosted Sabbatical Visit (2012)
- 4 Collaboration with U. Warwick, Warwick Manufacturing Group on Sustainable and Recyclable Composites. Spent 2012-2013 Sabbatical at WMG. (2012-present)

I.2 Outreach activities.

- 1 Middle School Minds engineering day event lecturer. Provided two 2 hour activity sessions for 6th-8th grade students (F 2003).
- 2 Multi-ethnic Introduction to Engineering (MITE) / Seminar for Top Engineering Prospects (STEP) lecturer. Provided two 2 hour activity sessions for high school students (Sum 2004).
- 3 Women in Engineering Day (WIE) Preview Day (F 2004). Provided 2 hour activity session for high school students.
- 4 4-H Round-Up Career Exploration Day (Sum 2005). "The High Technology of Materials" Provided 1 hour activity session for Junior High School Students.
- 5 Women in Engineering Day (WIE) Preview Day (F 2005). Provided two 1-hour activity session for high school students.
- 6 School of Materials Engineering Representative to the Big Ten Expo kickoff dinner (F 2007)
- 7 TAPPI Webinar workshop to update the industry on nanocellulose in cement. (Apr 2017).

I.3 Other relevant information.

- 1 Faculty representative for Alpha Sigma Mu International Honor Society for Materials (2003-2011)
- 2 School of Materials Engineering Honors Advisor (2004-2009)